

APRIL 1963 ISSUE

**DELTA
COLLEGE
BULLETIN**

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**UNIVERSITY
CENTER,
MICHIGAN**

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ERRATA

- Page 13 Supplement to Tuition and Fees — All students, new and returning, must pay an advance deposit of \$8.50. New students are required to send this deposit with the matriculation fee of \$10.00. The advance deposit is not refundable, but is credited to the tuition payment at the time of registration.
- Page 22 The number of hours following Social Studies 111 should appear as 4-0, where 4 designates the lecture hours, and zero the laboratory hours.
- Page 23 The number of hours following Biology 163 should be 3-3. The same correction applies to Biology 164.
- Page 26 The prerequisite for English 282 should be changed to "English 112 or two trimesters of Humanities". The number of hours should be 3-0.
- Page 29 The word "French" in the fourth line of the description of German 211 should be "German".
- Page 32 The number of hours of Political Science 251 should be 3-0.
- Page 37 The note following the description of Accounting 112 should be changed to "Credit will not be given for both Accounting 111 and 251, or Accounting 112 and 252".
- Page 37 The number of hours following the description of Accounting 251 and Accounting 252 should be 4-1.
- Page 39 The number of hours of Architecture 155 and Architecture 156 should be 0-6.
- Page 39 The number of hours following the description of Art 115 and Art 116 should be 0-6.
- Page 40 The number of hours of Biology 111 and Biology 112 should be 3-3.
- Page 47 The course number is erroneously listed for Electrical Circuits under the heading Electrical Technology. The course number should be 235.
- Page 49 The course description of Mathematics 110 should be as follows:
- 110 Basic Mathematics** 3 hrs. credit
- PREREQUISITE: Mathematics 91 if mathematics placement score is unsatisfactory. Designed for elementary education candidates. Opportunity to remedy defects in the use of fundamental operations. Includes mathematics review and methods for elementary teaching. Topics studied are combinations, rapid calculation, mixed numbers, decimals, percentage, interest, discount, graphs and statistics. Does not count toward mathematics major at senior college. 3-0
- Page 50 The number of hours following the description of Mechanical Technology 111 should be 2-3. The number of hours of Mechanical Technology 221 should be 3-2.

ADDENDUM

Two additional English courses should appear on page 48, as follows:

115 <i>Introductory Journalism</i>	(1-2)	2 hrs. credit
116 <i>Introductory Journalism</i>	(1-2)	2 hrs. credit

TO THE PROSPECTIVE STUDENT:

Every student at Delta College belongs to three communities. The first is the specific school in which he is enrolled, and at Delta there are three: the College of Community Service, the School of Nursing, and the College of Letters.

Delta is planned on an assumption of future growth. Each one of the three schools will become larger, and new schools will be added. As growth occurs, however, each student should continue to find himself in an academic group small enough to know his fellow students, to establish friendship with his teachers, and to be personally involved in the pursuit of common objectives. Whatever size Delta College may achieve in years to come, each student will be a member of an academic unit that preserves and guarantees to him small-college attention and experience.

The second community is the wider one of Delta College itself. The cultural life, the social activities, the recreation and governmental affairs of Delta are organized on a college-wide basis. All of the great facilities of the institution including the library, the television programs, the art and music enterprises, the appearance of visiting specialists and authorities — are part of the life of the student at Delta.

The third community is the wider one of a metropolitan area joined together to form a living organism of 350,000 individuals. The campus of Delta College is, in reality, the three counties of Saginaw, Midland, and Bay. Within this area will be found remarkable resources of specialized talent that will be brought together to serve the student. By the same token, the resources of the institution will be available to the industry, the various units of government, the community enterprises, the social service, and the cultural agencies of the tri-county area.

Located near the center of the triangle formed by the three major cities, Delta College is prepared to be a focus that not only concentrates the finest aspirations of this area, but also serves as a unifying influence among its people.

Faithfully yours,

Samuel D. Marble

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EDUCATIONAL OBJECTIVES OF DELTA COLLEGE

The Imparting of Knowledge. The most obvious and long-established function of any institution of higher learning is communicating to its students in such a way as to give them permanent command of it, the knowledge which makes up our common cultural heritage and the specialized sectors of knowledge that may apply to their individual interests and professional objectives.

The Discovery of New Knowledge. A faculty member can continue to be a fresh and stimulating teacher only if he is also probing the frontiers of knowledge. In more comprehensive terms, any institution of higher learning must be in the forefront of the opening up of new vistas; the pursuit of knowledge for its own sake is the life-blood of the intellectual life.

The Application of Knowledge. In order to discharge its whole responsibility to society, the modern college or university must also translate new knowledge into terms that have meaning for the world of action, and bring this new material to bear on the practical affairs of men. It is a false conception to think of the college or university as an ivory tower withdrawn from the affairs of men, or as a stratospheric world of pure intellect unconcerned with the workaday world.

The Integration of Knowledge. The more the scope and complexity of knowledge increases, the more it becomes evident that there are no water-tight compartments in what we know, in what causes bring about what results, or in how we react to our environment. Therefore there is increasing attention to the relationships between fields of knowledge and to their interaction.

The Development of the Student as a Total Human Being. The primary obligation of an educational institution is to communicate to the student a firm command of some related fields of knowledge, and to develop in him the intellectual ability to utilize his knowledge effectively. However, any member of the complex society of today must have personal qualities and values that go beyond such a concept. In former days, the churches and the family gave the necessary personal development through their influence and discipline. With the increasing secularization of our society, and the relaxing of the close-knit character of the family as a unit, the educational institutions are being more and more called on to develop those elements of character and those values which are necessary in a civilized man to give him control and direction of his course in life.

The Relating of the Student to His Environment. Leaderships based on independence of thought and belief are vital to our future. There is an urgency to develop qualities that transcend "togetherness" and a common denominator, that express themselves in the drive for individual excellence and unique characteristics. Even a fully developed individual, however, must always act within the context of the group, and react to the forces of the group. It is a part of the educational responsibilities of our institutions to give attention to this balance of individuality and cooperation.

ORIGIN, HISTORY, AND GENERAL PURPOSE OF DELTA COLLEGE

Delta opened after six years of planning and study. The meetings of representatives of the three counties in which the proposal for the College was developed began in 1955. Legislation was submitted to the State of Michigan in 1957, and in the same year Bay, Saginaw, and Midland Counties voted themselves into an administrative district for the purpose of financing, building, and operating a new institution of higher learning.

The three counties have a census in excess of 350,000 people and represent one of the rapidly growing sections of the State. It is generally believed to be the largest population concentration in the nation without a degree-granting institution. Legislation affecting the further development of the College is now under consideration.

When Delta College opened in September, 1961, Bay City Junior College closed after forty years of effective service to the area. Although Delta College is a new and independent institution, it is maintaining without interruption the educational opportunities that previously have been available. The faculty of Bay City Junior College was absorbed by Delta and microfilm copies of Bay City Junior College records are maintained at the Bay City Board of Education.

Because the College is locally financed, special consideration is given to students whose legal residence is in the tri-county area. Tuition charged for these students is half that charged for others living outside the tri-county area.

LOCATION AND ENVIRONMENT

The campus is located approximately in the center of the triangle formed by Bay City, Midland, and Saginaw, but somewhat nearer to Bay City than the other two cities. It consists of a tract of one square mile, 640 acres, and is bounded by Mackinaw, Cass, Four Mile, and Delta Roads. The buildings are situated in the center of this section.

All the activities of Delta College will, for the present, be housed in one building, constructed around a landscaped center court one acre in area. The main portions of the building, including the Library, the Commons, and two Student Concourses, look onto the Court through glass partitions. Other areas in the central building and in six wings accommodate faculty and administrative offices, classrooms, a gymnasium seating 2200, a small auditorium seating 266, a book store, and a technical area including educational television studios and master control rooms, language and audio-visual laboratories, a computer center, and other technological aids.

There are no dormitories or faculty housing on the campus. There are parking areas to accommodate 1400 cars.

Library. The Library of Delta College is the central study area and operates as an integral part of the educational program. Books, magazines, newspapers, and other types of library material are available for student and faculty use. Both materials and professional staff are available on a generous schedule of open hours.

Acquisition of materials, and planning for the operation of Delta College Library started two years before the first class session was expected to begin. The standards of the Association of College and Research Libraries, a section of the American Library Association, were met from the start of operations. This

fact means that the Delta College Library began at the point which some other institutions have as their library goal.

Bookstore. Delta College has a well-equipped Bookstore in operation. The Bookstore is adjacent to the Commons, and provides a complete stock of textbooks and reference books, necessary school supplies, and a variety of other items which are related to the basic educational aims and activities of the College.

ACCREDITATION

Delta College is a candidate for recognition by the North Central Association of Colleges and Secondary Schools. In the meantime, the College has developed suitable transfer arrangements with institutions in the State of Michigan such as the University of Michigan, Michigan State University, and Wayne State University. These institutions, and others, have given assurance of the acceptability of credits earned at Delta.

In October, 1962, the Michigan Commission on College Accreditation granted Delta College full accreditation as a community college for a two-year period ending June, 1964, thus making official the validity of Delta credits at all degree granting institutions of the State.

The legal basis of Delta College was established under Act 182 of the Public Acts of 1957.

THE TRIMESTER PLAN

The Trimester Plan has been adopted by the Delta College Board of Trustees as a means of developing year-round operation. Each trimester is composed of fifteen weeks, and covers a full semester's work.

The two-year academic program offered by Delta College can be completed in one and one-third calendar years. Specifically, a freshman entering in September of one year can complete four trimesters by the end of December in the next calendar year; by entering in January can finish two academic years by April of the following year; and by entering in April can finish two academic years by August of the following year. However, students are not required to follow so concentrated a program, and course offerings are arranged to meet varying trimester attendance patterns.

An eight-week summer session begins in mid-June and ends concurrently with the Spring trimester in mid-August. Improvement area courses for high school graduates who wish to make up deficiencies prior to enrollment in the September trimester constitute the principal offerings. Selected regular college credit courses will be offered as justified by student demand.

COOPERATIVE EDUCATIONAL PLAN

Cooperative education involves the arrangement with an employer which permits the student to work and attend college on one of two patterns: The first consists of alternating a trimester of full-time work with a trimester of full-time study. The second is an arrangement which permits the student to carry part-time work simultaneously with a part-time program of study. In either case, the employment is chosen for its educational value, and work assignments are made to relate experience to study. Presently, students are enrolled under the cooperative system of education in the following fields: Mechanical technician, engineering, pre-pharmacy, pre-veterinary science, pre-medical, commercial art, photography, education, library science, secretarial, stenographic, journalism, chemistry, business administration, medical technology, accounting, and sales. Opportunities for additional programs will be explored with business and industry.

DELTA COLLEGE CALENDAR

Spring Trimester 1963

April 25, 26	REGISTRATION
April 29	CLASSES CONVENE (8:00 A.M.)
May 30	MEMORIAL DAY*
July 4	INDEPENDENCE DAY*
August 9	SPRING TRIMESTER ENDS

Eight-Week Summer Session 1963

June 14	REGISTRATION
June 17	CLASSES CONVENE (8:00 A.M.)
July 4	INDEPENDENCE DAY*
August 9	SUMMER SESSION ENDS

Fall Trimester 1963

September 2	LABOR DAY*
September 4, 5, 6	REGISTRATION
September 9	CLASSES CONVENE (8:00 A.M.)
November 28	THANKSGIVING DAY*
December 20	FALL TRIMESTER ENDS

Winter Trimester 1964

January 2, 3	REGISTRATION
January 6	CLASSES CONVENE (8:00 A.M.)
April 17	WINTER TRIMESTER ENDS
April 20, 21, 22	SPRING VACATION

Spring Trimester 1964

April 23, 24	REGISTRATION
April 27	CLASSES CONVENE (8:00 A.M.)
August 7	SPRING TRIMESTER ENDS

Eight-Week Summer Session 1964

June 12	REGISTRATION
June 15	CLASSES CONVENE (8:00 A.M.)
July 4	INDEPENDENCE DAY*
August 7	SUMMER SESSION ENDS

Fall Trimester 1964

September 2, 3, 4	REGISTRATION
September 7	LABOR DAY*
September 8	CLASSES CONVENE (8:00 A.M.)
November 26	THANKSGIVING DAY*
December 18	FALL TRIMESTER ENDS

* No Classes

ORGANIZATION

THE COLLEGE OF LETTERS

Philosophy and Objectives. Learning is something no one can do for the student; it is a personal activity which he must do for and by himself. The function of the educational institution is to create the situations that facilitate learning, furnish the guidance and experience through the faculty to keep learning in focus and moving toward an objective, and offer the stimulation and associations that lead toward a mature intellect and personality.

The rapidity of technological advance and the complexity of operation in the business and professional worlds are making the training of all students for specific and immediate objectives inadequate. On the other hand, there is a common body of knowledge and a common battery of skills which are required for every educated American, be he artist or engineer. This common body of experience is usually called "the liberal arts." As knowledge, it includes the history, thought, and arts of Western Civilization; as skills, it embraces, among others, the ability to deal with abstract ideas and problems, and the ability to deal with people, to communicate with them and cooperate with them. It is intensely practical in that it relates science and technology to the rest of human existence. It is also in line with the fact that professional schools of all types are insisting more and more on the desirability of the broad and flexible base offered by a liberal arts undergraduate program rather than narrow preparation for some specific operation.

However, preparation in certain subject matter areas is prerequisite for later specialization or professional training. Study in these areas will be combined with the basic liberal arts approach through a series of elective courses which can be arranged in the most appropriate pattern to round out the student's needs and interests during the first two years of his college course.

Methodology. The College of Letters will combine the work usually identified as of the class-room and the curriculum with an interest in the general development of the student. This attention to the individual will be considered as an element of a total educational experience, not just lip-service to an ideal or "extra-curricular activities."

In so doing, emphasis will be given to motivating the student to do work of a self-directed nature, with special attention to helping him to develop the necessary study and organizational skills. On this base, every effort will be made to induce each student to work to his full capacity as an individual, with accelerated courses, personal projects, etc.

However, full recognition will be given to the preparation, motivation, and personal choice of the individual student in counseling him into programs with varying degrees of emphasis on such elements as individual work, discussion techniques, etc.

In the organization of instruction, every use will be made of those technological aids to teaching which free the professor from routine operations in order that more time and attention can be given directly to the student. Television, language and other types of audio-visual laboratories, programs of self-instruction through machines and other devices, and other technological means will be utilized, with the objective of personalizing the contacts of the individual student with the teacher thus freed from routine exercises.

Types of Curricula. The program of liberal arts-centered study, supplemented by the appropriate specialized subject matter courses, will prepare the

student for major concentrations and professional objectives in all principal fields.

Transfer requirements to the various courses offered in the junior and senior years by other institutions of the State of Michigan have been worked out, and each entering student should consult with his adviser to decide upon the specific pattern of selection that is best adapted to his future objectives.

SCHOOL OF NURSING

Philosophy. The School of Nursing contributes to the improvement of society and to the preparation of competent professional nurses. As an integral part of Delta College, the School of Nursing strives toward the College's objectives and ideals of excellence in teaching, advancement and discovery of knowledge, and positive contribution to the general welfare of society and its institutions. It recognizes that professional education is education for professional service, and thus accepts its particular functions of preparing nurses capable of making their distinctive contributions to the health services as one group of workers in the health profession.

The School of Nursing believes that the professional nurse is one who is able to give not only comprehensive nursing care, but must also develop the ability to function effectively with other members of the health team. The student must accept responsibility for contributing to the improvement of society and to further nursing research. He or she must develop the ability to be self-directing, to identify problems, and to work toward achieving satisfactory solutions.

The School of Nursing believes that the foundation courses in the humanities, the social sciences, and the natural sciences, are an integral part of the curriculum, that contribute to the student's depth and breadth of understanding.

The School of Nursing believes that there must be recognition of the individual student's level of development and needs in order that there may be the selection of learning experiences necessary for optimum personal and professional growth.

Objectives. The objectives of the School of Nursing are to assist the student to:

1. Develop the knowledge, skills, attitudes, and appreciation of values necessary for the nurse's role in the comprehensive care of the patient, the community's health, and the leadership skills as a member of the health team.
2. Understand the common phenomenon of one's physical environment to apply habits of scientific thought to personal, professional, and civic problems, to appreciate the implications of scientific discoveries for human welfare, and to apply scientific principles to the promotion of health.
3. Acquire and use the skills and habits involved in critical and constructive thinking.
4. Develop the tools of communication so they may be used effectively in interpersonal relations.
5. Participate actively as an informed and responsible member of the nursing profession involving professional problems.
6. Develop as a responsible and creative citizen of the community.

Organization. Unlike all other programs at Delta at the present time, which

cover two years or less, the School of Nursing curriculum will be nine trimesters, or three calendar years, in length. Upon successful completion the student will receive a diploma, be eligible to sit for State Board Examinations, and after passing them will have the right to use the title of Registered Nurse.

The program is divided equally between liberal arts courses offered in the College of Letters and nursing courses and clinical laboratory experience offered by the School of Nursing in cooperation with St. Luke's Hospital, Saginaw, Michigan, and other community agencies.

THE COLLEGE OF COMMUNITY SERVICE

Philosophy and Objectives. The College of Community Service is a two-year college which has a multiple purpose. First, it will serve students who wish to take courses that lead to technical or semi-professional proficiency. Second, opportunities will be made available for high school graduates who need remedial study prior to enrolling in degree-type programs. Third, it will offer a limited number of specific transfer curricula for students preparing to complete specialized degree courses in other institutions. Its organization of curricula and its methodology are designed to meet personal and professional objectives alternative and complementary to those served by the College of Letters.

To make possible the implementation of these purposes, the instruction in the College of Community Service will be organized in three areas:

1. The area of improvement studies for students whose preparation, either in level of achievement or subject coverage, has not fully prepared them for college level work. Students who are enrolled in this area may transfer to either of the other two areas when they are sufficiently improved to proceed to more advanced study.
2. The technical area for students who plan to complete their formal education in one or two years, and who are primarily interested in a job-oriented objective.
3. The academic area for students who are interested in professional and general educational objectives leading to a degree, and for whom the organization of curricula and the methods of program implementation of the College of Community Service are especially appropriate.

DIVISION OF CONTINUING EDUCATION

Philosophy and Objectives. The Delta Evening College and Continuing Education Division provides varied and continued educational opportunities of all types for adult residents of the Delta College service area. Credit and non-credit, formal and informal, continuing and adult education programs are offered each trimester, both on campus and in cooperation with the community schools and other interested organizations in the Delta area.

Students may achieve a considerable variety and scope of objectives through attendance at Delta Evening College. A complete program of testing, counseling and guidance functions will assist evening students in all phases of the selection of courses and the planning of study programs.

Most courses offered in the day programs are available in the evening, together with a variety of special classes not offered on the day schedule. Thus, the adult evening student may complete the first two years of college credit work in the curricula offered to full-time students during the day. Through cooperative agreements with neighboring institutions, continued work at the third and fourth year college levels is available for evening students on the Delta Center Campus.

The Division of Continuing Education also offers or cooperates in offering in the college district, a large, versatile, and flexible program of institutes, activities, and courses without reference to credit. These offerings are intended for people who are interested in studying and participating for purposes of cultural advancement and the development of individual and group interests. Delta Evening College and Continuing Education Division also works in close cooperation with professional, business, industrial, agricultural and other community groups and organizations in the provision of specially arranged in-service, refresher, or work-oriented educational programs for mature employed residents of the Delta College service area.

Basis for Placement in College and Curriculum

While it is expected that the student in applying for admission will indicate the College and curriculum of his choice, it is the responsibility of the student personnel counselor to determine the proper enrollment for each individual. The counselor, in consultation with the student, will reach a decision on the basis of academic record, high school recommendations, achievement test scores, personal objectives, and all other available information.

Students in either the College of Community Service or the College of Letters may enroll in courses of the other College on the recommendation of the Counselor, and with the permission of the Dean of the College of Letters.

Students who are planning to transfer to another institution at the end of one or two years will normally be enrolled in the College of Letters; however, there are some sequences required for specific upper division majors which can be handled more effectively in the College of Community Service, and students intending to transfer to such majors will be enrolled in that College. In cases where one or two individual courses given only in the other College are required for a transfer curriculum, cross registration will be arranged.

Note: In many cases, individual courses or sets of courses in the College of Community Service, which are not primarily intended for transfer, may be acceptable to certain other colleges. This possibility should be investigated before final registration in cases where it is applicable.

Transfer between the College of Letters and the College of Community Service

A student who transfers from one school or college to another at Delta will receive credit for all course work successfully completed. He will, however, be required to fulfill any special requirements of the college or school to which he transfers, in order to be eligible for the associate certificate.

ADMISSIONS

I. Requirements for Admission to the College of Community Service:

The applicant will be required to present a diploma from an accredited high school with satisfactory achievement in the following:

English: Three years of English are required, but four years of college preparatory English are strongly urged.

Mathematics and/or Science: Two years required, but four years are urged.

History and Political Science: Two years are required.

Foreign Language: None required, but at least two years are urged.

Additional requirements are necessary for admission to some of the technology curricula.

II. Requirements for Admission to the College of Letters and the School of Nursing:

The applicant must present a diploma from an accredited high school with satisfactory achievement in the following:

English: Three years of English are required, but four years of college preparatory English are strongly urged.

Mathematics and/or Science: Two years required, but four years urged.

History and Social Science: Two years required.

Foreign Language: None required at this time, but at least two years are urged.

A C average in high school will also be required.

III. The Improvement Division:

If the applicant does not bring a record which meets the requirements indicated in Paragraphs I and II above, he will be asked to make up deficiencies in the Improvement Division. This Division is open to students with legal residence in the Tri-County area who show adequate promise of overcoming academic deficiencies in order to proceed to college level instruction. Admission to this program is at the option of the College.

The Applicant Must Offer the Following Placement Examinations:

1. The Scholastic Aptitude Test (SAT) is required of all entering students. It is given by the College Entrance Examination Board, Educational Testing Service, 20 Nassau Street, Princeton, New Jersey. For detailed information, the student should see his high school counselor or write directly to the Educational Testing Service. Students who wish to take the SAT for guidance purposes at the end of their junior year of high school are encouraged

to do so. The College asks that the applicant take this examination no later than March.

2. Achievement tests in English, reading, and mathematics, administered by Delta College, are required of all entering freshmen. They will be given in the afternoons at 1:30 p. m., on the same dates and at the same place as the SAT.

High school students who are preparing for Delta College are urged to take the Preliminary Scholastic Aptitude Test for counseling purposes during their sophomore or junior year.

Note: The code number for Delta College used by the Educational Testing Service is 1816.

Applications for Admissions. Application blanks may be obtained from area high schools or from the Director of Admissions. A sheet of detailed instructions is included with the admission forms, and should be followed carefully. The documents and materials required for application must include:

1. An application blank fully and carefully completed in ink or typewritten.
2. A deposit of \$10.00 is to be sent with application. (For specific information see the Financial Information section).
3. A medical blank completed by a physician.
4. A high school transcript mailed directly from the high school at the applicant's request.
5. The Personal Qualification Sheet to be taken by the student to the high school principal or dean, completed by him, and sent directly to the College.
6. Correspondence regarding admissions should be addressed as follows:

Director of Admissions
Delta College
University Center
Michigan

Admission Procedures. A student is admitted to Delta College, but is asked to indicate the College and curriculum of his choice. After acceptance, each applicant will be given an individual appointment to meet with a Delta College counselor to discuss the student's abilities and goals, and to make the final decision on the College and curriculum in which he will be enrolled. The secondary school record of the applicant will be evaluated as to subjects studied, the quality of his performance, and the requirements of the curriculum requested. The recommendations of the high school principal and of the counselor will be definite factors in placement, as will evidence of his strong and weak points from the tests taken. Personal information as revealed by the application and by the health record will also be taken into consideration in planning the student's program.

Transfer Students. Transfer students are admitted to Delta College on an individual basis. All procedures applicable to the admission of new students will be followed, and after admission all requirements of Delta College must be met.

Advanced Placement. Delta College will cooperate to the fullest extent in granting advanced placement to entering freshmen. Requests for advanced placement should be made to the Registrar, accompanied by supporting evidence from the secondary school.

FINANCIAL INFORMATION

Registration Fees. At the time an application for admission to Delta College is received it must be accompanied by a \$10.00 deposit. This \$10.00 deposit will not be refunded unless a prospective student is refused admittance by Delta College. If the student is admitted this \$10.00 deposit pays the student's Matriculation Fee.

TUITION AND FEES

	<i>Delta District Students</i>	<i>All Other Students</i>
Tuition — per credit hour -----	\$ 8.50	\$15.00
Matriculation Fee (This fee is paid only once) -----	10.00	10.00
Evening School Tuition — per credit hour -----	10.00	17.00
Late Registration Fee -----	5.00	5.00
Make-up Exam, Trimester or Mid-Trimester -----	4.00	4.00
Transcripts — 1st -----	N/C	N/C
All Others -----	1.00	1.00

The full tuition for each trimester is due at registration time. There is no system of deferred payments. Students must complete their registration by paying the tuition in full on the day they register.

Student loans are available through the Dean of Students Office, but application for such loans must be made well in advance of registration.

Residence Qualifications. In order to qualify as a resident of the Delta College District for tuition purposes, a student must be a bona-fide resident of either Bay, Midland, or Saginaw Counties.

OTHER SPECIAL FEES

Delta College makes no charge for science fees or applied art fees. A part-time student may pay an additional student service fee in order to receive the full benefits of the student service program. This extra payment is not required and is paid only if the student elects to do so.

Tuition and Fees Refund Policy. After tuition has been paid and classes have begun, the following schedule will be used to determine trimester refunds. If a student withdraws during the:

First or second week -----	75%
Third or fourth week -----	50%
Fifth or sixth week -----	25%

No refund will be made after the sixth week.

Summer Sessions refunds will be made as follows: If withdrawal occurs during the:

First week -----	75%
Second week -----	50%
Third week -----	25%

No refund will be made after the third week.

FINANCIAL ASSISTANCE

There are three basic forms of financial assistance available to Delta College students — Scholarships, Educational Grants and Loan Funds. Several scholarships and educational grants are available. Further specific information on each of these three forms of financial aid may be secured from the office of the Dean of Students. A brief discussion follows:

Loan Funds. Delta College can assist students with loans from three different sources.

1. A substantial amount of money is available to provide student loans under the National Defense Student Loan Fund. This loan fund has several specific features which make it exceptionally valuable to students who qualify. The interest rate is low and payments do not begin until a student's college work is completed in most cases. In addition, there is a special feature providing for the forgiveness of a portion of the loan for those students who enter the teaching profession.
2. It is possible for students to obtain personal loans for college expenses from local banks on very limited security by applying through the Michigan Higher Education Assistance Authority. This is possible because all approved loans are assured to the loaning banks by the Michigan Higher Education Assistance Authority.
3. The Delta College Short Term Emergency Student Loan Fund resources have been developed from the following gifts or other sources:

Arthur Hill Class of 1935	Friends of Nursing
Bay County PTA	Barbara Hess Memorial
Bay City General Hospital	Lawyers Wives of Bay County
Leonard Bergstein	Lawyers Wives of Saginaw County
B'nai Brith — John Merdler Lodge	Michigan Chapter of Broadcast Pioneers
Buena Vista High PTA	Louise Osthelder
Gilbert A. Currie Estate	Jack Perrin Memorial
Dow Instrument Department	Saginaw Exchange Club
Family Loan Company	Mr. and Mrs. J. H. Stark

Scholarships. Delta College grants scholarships, as the name implies, to students who have demonstrated superior academic achievement. The funds for these scholarships are made available through the generosity of interested individuals and firms. Some donors specify that the recipients must show financial need as well as evidence of superior academic achievement.

The following scholarships have been established at Delta College. Applications should be made at the office of the Dean of Students.

- The Seth Babcock Fund
- The Bay City Association of Fine Arts Fund
- The Bay City Panhellenic Fund
- The South Bay City Business Men's Association Fund
- The Mr. and Mrs. Herbert D. Doan Endowment Fund
- The Fred Dulmage, Sr. Fund

The Dow Chemical Company Fund
The Lucy Hammond Gamble Fund
The Mr. and Mrs. James Gerity, Jr. Broadcasting Trust Agreement
The Dan E. Karn Fund
The Joseph C. Hirschfield Fund
School of the Kiwanis Clubs of Riverside Saginaw, Saginaw,
Bay City and Midland
The Francis Goll Mills Education Grants
The Plueddemann Scholarship Fund
The Melvin J. Zahnow Fund

In addition to the above scholarships, the Board of Trustees awards a limited number of scholarships annually for deserving students. For more information please contact the Dean of Students.

GENERAL INFORMATION AND REGULATIONS

College Success. Delta College believes that all students should show academic accomplishment if they are to remain in college. Students showing unsatisfactory progress will be placed on probation. If the record continues to be unsatisfactory, the student will be asked to withdraw from college.

While the faculty will assist the student in every way possible by individual help and counseling, the student must take the responsibility for his ultimate success. Absences from class and too heavy work programs inevitably lower academic accomplishment.

The College program is being planned to occupy fully the student's time. The student must face realistically his own abilities and limitations, and arrange his total schedule accordingly. If it is necessary for him to work more than ten or twelve hours weekly in addition to carrying a college program, he should reduce his academic load proportionately.

Normal Class Load. No student may elect more than 17 hours (not including physical education) without special permission from the Dean or Director of the College, School, or Division in which he is enrolled. Such permission will require the concurrence of the Student Services Office and the student's faculty adviser.

As a prerequisite for such permission, the student must have earned a grade point average of 2.5 or better during the previous college trimester or during the last period in high school, whichever was more recent.

Course Numbers and Notations

1. Courses covering similar areas in the College of Community Service and in the College of Letters are numbered differently to indicate differences in treatment.
2. All courses numbered below 100 will be in the Improvement Division. They will be given service credit, but will not be counted for a certificate of graduation from the College of Community Service nor will they be considered for honor societies, extra curricular activities, etc.

All courses numbered in the 100 series will normally be taken by students below sophomore standing. All courses numbered in the 200 series will normally be taken by students with sophomore standing.

Registration in courses not normally open to the individual student will be arranged on the recommendation of the Counselor, and with the permission of the appropriate Dean.

3. A numerical notation at the end of each course description indicates the number of class and laboratory hours, i.e., 3-2 indicates 3 hours of lecture and discussion and 2 hours of laboratory or other applied exercise.

Grades and Grade Points

The following grading system will be used:

A — Excellent	D — Poor	W — Satisfactory
B — Good	E — Failed	W-D or W-E —
C — Fair	I — Incomplete	Withdrawn Unsatisfactory

If an Incomplete is not removed by the end of the fourth week of the trimester following that in which the I was given, the grade becomes an E.

The grade point system will be as follows:

For each credit hour of—

A — 4 points	D — 1 point
B — 3 points	E — No point
C — 2 points	

In the calculation of the overall grade point average, the number of E hours must be included, although no grade points are allowed. Grade points for physical education are not to be included in the overall average.

Class Standing. A student who has earned 24 semester hours credit will be ranked as a sophomore. All other students will be ranked as freshmen, except those enrolled in the Improvement Area of the College of Community Service, who will be ranked as non-classified.

Class Attendance. The policy on attendance at class and other College exercises will be as follows:

1. Attendance will be expected at all classes. There will be no system of cuts.
2. Courtesy demands that students explain the reasons for their absences to their instructors.
3. It is the responsibility of the student to make definite arrangements for all work before going on field trips or other college-sponsored events. If proper credentials for such activities are presented and arrangements are made for the work before the event, then the absence should not be reported, but should be recorded in the instructor's records as excusable.
4. Except in cases involving field trips or school activities which involve group absences, no instructor will require statements from students concerning absences.
5. A daily record of all absences will be maintained by all instructors.
6. Whenever the number of absences of a student become *detrimental to his progress* in a class, as determined by the instructor, the student will be referred to the Student Services Office by the instructor.
7. If either of the following two situations occurs, the student may be dropped from the class at the discretion of the instructor:
 - A. If further absences occur, or
 - B. If the student does not present to the instructor satisfactory evidence of contact with his adviser.

Scholastic Performance, Probation, and Dismissal for Academic Deficiency

1. A minimum grade-point average of C, 2.0 grade points per credit hour, is required for graduation. This average is computed by dividing total honor points by credit hours attempted.
2. A student who has attempted twelve credit hours or more is placed on academic probation if his cumulative grade-point average falls below 2.0. Incomplete grades will be counted as failures for purposes of assessing probation status, except where the Incomplete indicates a deferred grade.

3. Students on academic probation may not enroll for more than twelve hours of work, with the following exception:

A student on probation who makes a point average of 2.5 or higher in the trimester after he has been placed on probation may carry fifteen hours the next trimester with his adviser's approval, even though his cumulative average does not remove him from probation.

4. A student on probation who fails to raise his cumulative average to 2.0 in the following trimester of attendance after having been placed on probation will be dismissed for academic deficiency, with the following exception:

A student on probation who maintains a grade-point average of 2.0 or higher each trimester on probation is allowed to continue in college on probation even though his cumulative average is below 2.0.

5. The academic status of entering students who are enrolled in courses in the Improvement Area shall be determined by the following regulations:

A. A student deficient in meeting the entrance requirements shall be required to take the needed course or courses in the Improvement Area to complete the entrance requirements. He shall be classified in the Improvement Area and placed on probation.

B. A student who meets the entrance requirements but needs two or more courses in the Improvement Area to strengthen his preparation for college work shall also be classified in the Improvement Area and placed on probation.

C. A student who meets the entrance requirements and takes not more than one improvement course to strengthen his preparation for college work shall be enrolled as a student in good standing in the College of Letters or the College of Community Service.

6. The above regulations for academic probation and dismissal also apply to transfer students. Grade-point averages from colleges previously attended are given the same right as those earned at Delta College, and the same scale is applied for probation and dismissal.

Change of Class Registration. Students who wish to change their course elections in any way must secure permission from the Student Services Office.

1. The last date for entrance into a course will be the last day of the first week of the College trimester.

2. During the first week of classes, no record of withdrawal appears on the student's record.

3. Courses dropped after the first week are recorded with the mark of "W" if the grade is satisfactory, or "W-D" or "W-E" if unsatisfactory, with the additional notation "no credit" in all cases. The appropriate honor points are counted for purposes of probation, but not for over-all grade point average on the official record.

Withdrawal from College. To withdraw from college, the student must secure a withdrawal form from the Student Services Office and process it according to directions.

Readmission after Withdrawal or Dismissal for Academic Deficiency

1. All applications for readmission after withdrawal, or dismissal for academic

deficiency, will be made to the Director of Admissions, who will consult with the appropriate Academic Dean and the Student Services Office in reaching a decision.

2. Students who have been asked to withdraw because of academic deficiency will normally be considered for re-admission only after the lapse of one calendar year from the time of their withdrawal. Such students will normally be re-admitted on probation.

3. The same considerations and procedures will be applied to students seeking admission to Delta after having been dismissed for academic deficiency by any other educational institution.

Make-up Exercises and Examinations. Requests for make-up exercises and examinations will be granted only by authorization from the Student Services Office.

Grade Requirements for Participation in Activities

No student on probation may accept offices or major chairmanships in student activities, or participate in inter-collegiate athletics. Participation in inter-collegiate athletics must also be subject to the rules of the Michigan Community Junior College Athletic Conference. Intramural athletics are open to all students.

Recognition of Superior Academic Achievement. Each trimester there will be issued a Dean's List, containing the names of all students who have a grade point average of 3.5 or better.

Graduates who are in the upper ten percent of the class will be honored at the Convocation at which they receive their Associate Certificates.

Transcripts and Recommendation for Transfer. Students wishing transcripts for purposes of transfer must request them from the office of the Registrar. All official transcripts are sent directly to the institutions designated by the student. The first transcript is furnished without charge. For every transcript after the first a fee of one dollar, payable in advance, will be charged.

In addition to a transcript, any student who wishes a recommendation to the receiving institution must present his application to the Registrar, who, after attaching the transcript, will forward the application to the appropriate Delta office for action. Such a recommendation from Delta will be based on the total progress of the individual and not on academic achievement alone.

Associate Certificate from College of Community Service. Students who wish to receive an Associate Certificate from the College of Community Service must complete 62 hours of credit in courses numbered above 100 with a minimum grade point average of 2.0 including the following:

1. Eight hours in the field of English and Communications.
2. One of the following:
 - a. Eight hours of laboratory science or a four hour laboratory science course and Mathematics to total a minimum of eight hours.
 - b. Eight hours in the field of the Humanities.
 - c. Eight hours in the field of the Social Sciences.
3. To satisfy state law, three hours of Political Science are required which may be included within the eight hours in the field of Social Sciences.
4. Two hours in Physical Education.

Associate Certificate from College of Letters. A student who wishes to receive an Associate Certificate from the College of Letters must complete 62 hours of credit with a minimum grade point average of 2.0, and including the following:

1. a. The Foundations Courses (16 hours in the Humanities, 8 hours in the Social Studies, and 8 hours in the Natural Sciences).
 - b. 28 additional hours of elective courses.
 - c. Two hours of Physical Education.
2. For students planning to transfer to another institution with specific requirements not available in the College of Letters, cross-registration in the required course or courses in the College of Community Service will be arranged. In such cases the credit may be applied toward the Associate Certificate of the College of Letters.

STUDENT AFFAIRS

Office of the Dean of Students. Delta College believes that while the intellectual development of the student is of great importance, the social, spiritual, and physical aspects of the individual are an inseparable part of his development. The College provides a climate in which this total growth is encouraged and made possible. The office of the Dean of Students offers services which contribute to this development and which complement the student's academic program. Student affairs of all kinds are administered through the office of the Dean of Students. This Office is also in charge of all student counseling and testing.

- (1) Professionally trained counselors are available in the Student Services Office to give special assistance with personal, educational, and vocational problems.
- (2) Each student also is assigned to a faculty adviser who has special competence in the area of the student's interests.

In addition to entrance tests, the Student Services Office makes available interest and aptitude tests for individual students.

Honor System. While Delta College has not formalized an honor system to govern academic exercises, the College believes that without personal honor the opportunity for education is wasted. Delta students are expected to abide at all times by a code of personal honor.

Student Health. The College maintains a Health Center and is equipped to provide emergency treatment and check minor health problems. A registered nurse is on duty from 8:30 a.m. to 4:30 p.m.

Student health and accident insurance are available at a low rate.

Student Residence. Delta College does not at present maintain dormitories and cannot assume full responsibility for student housing. The office of the Dean of Students maintains, however, a list of rooms which are suitable for students not living with their families, but ultimate responsibility for housing must rest with the parents. Experience indicates that students should live in private homes rather than in student apartments which have no adult supervision.

Athletics. All students to be eligible for the Associate Certificate must present two units of Physical Education.

A program of intramural activities offers opportunity for all students to participate in many types of sports and recreation. The College has programs of intercollegiate athletics in cross country, basketball, golf, tennis, track, and swimming; other types of competition will be added as the growth of the College makes possible.

Student Government. Basic in the philosophy of Delta College is the belief that the student must share with the administration and faculty the responsibility for his own development. The College Council, composed of students and faculty, contributes to the total Delta program. The effectiveness of the College Council is a primary concern of the College.

Publications. A college newspaper, a yearbook, and a creative writing magazine will be published by the student body. A Publications Board, a branch of the College Council, consisting of student and faculty representatives, determines general policies for college publications.

Student Activities. Activities are coordinated by the Activities Board, a branch of the College Council. The program includes both social and cultural affairs.

Student Interest Groups. Delta College encourages the formation of groups which have common interest or hobbies. Recognition of Delta College clubs may be gained by securing the proper forms from the Director of Student Activities and petitioning the Activities Board for recognition. Faculty advisers with special qualifications and interests will be designated on the request of the club.

Such groups are anticipated in the areas of drama, music, art, debating, political and international affairs, departmental or professional subjects, radio, television, motion picture, photography, skiing, hunting, hiking, canoeing, nature study, archeology, etc.

Activity Ticket. Upon registration each student receives an activity ticket and within two weeks an Identification Card. These cards will admit him without further payment to designated concerts, plays, athletics, and many other social and cultural events.

PLACEMENT SERVICES

Part-Time Employment. While the college cannot guarantee to secure part-time employment for every student, every effort is made to find suitable work for those who apply for it. (Employment can also be arranged through the Cooperative Education Plan, which was explained on page 5).

Students carrying full-time programs should not work more than twelve hours weekly. If it is necessary for any individual to work more than this, the student should lighten his academic program.

Full-Time Employment. Delta College has a Placement Office which will be of service to present students, alumni, and employers.

COURSE OFFERINGS FOR THE COLLEGE OF LETTERS

FOUNDATIONS PLAN

HUMANITIES

111 *Foundations of Western Civilization I*

4 hrs. credit

PREREQUISITE: None. Literature, music, plastic arts, philosophy, and currents of history from the Age of Sophocles through the Renaissance, with emphasis on their interrelation. Selected great works for each period. Practical experience in a creative medium for each student. 4-0

112 *Foundations of Western Civilization II*

4 hrs. credit

PREREQUISITE: None. Continuation of Humanities 111. From the late 17th century to the late 19th century. Practical experience in a creative medium for each student. 4-0

211 *Foundations of Western Civilization III*

4 hrs. credit

PREREQUISITE: None. The late 19th century to the present, with emphasis on American civilization. Practical experience in a creative medium for each student. 4-0.

212 *Foundations of Non-Western Civilizations*

4 hrs. credit

PREREQUISITE: None. Indian, Japanese, Arab, and African culture. Practical experience in a creative medium for each student. 4-0

SOCIAL STUDIES

111 *Foundations of Society I*

4 hrs. credit

PREREQUISITE: None. The principles, interrelationship, and function in social dynamics of the forces usually labeled economics, sociology, anthropology, political science, etc., with particular attention to their effect in what is usually called history. The project method, related where possible to local conditions, will be a principal means of instruction, plus intensive study of selected primary source material.

112 *Foundations of Society II*

4 hrs. credit

PREREQUISITE: Social Studies 111. Continuation of Social Studies 111. 4-0

NATURAL SCIENCES

111 *Foundations of Science*

4 hrs. credit

PREREQUISITE: None. The philosophy, development, rationale, and methodology of the scientific approach, demonstrated by selected illustrations showing the range and interrelationships of the various fields of science. Laboratory exercises and demonstrations will emphasize the techniques of science, such as experimental design, data gathering and correlations, statistics and probability, and development of conclusions from experiments. An introduction to the literature of science will be obtained through library projects and intensive study of selected pieces of primary source material. 3-3

112 *Foundations of Science*

4 hrs. credit

PREREQUISITE: Natural Sciences 111. Continuation of Natural Sciences 111. 3-3

**COURSE OFFERINGS FOR THE
COLLEGE OF LETTERS**

ASTRONOMY

- 151 *Descriptive Astronomy* 3 hrs. credit
PREREQUISITE: None. Solar system, stars, galaxies, celestial navigation, Kepler's laws. 3-2

BIOLOGY

- 151 General Botany** 4 hrs. credit
PREREQUISITE: High school Biology or Chemistry recommended. Study of morphology, activities, evolutionary relationships, and economic importance of major plant groups. 2-6

- 161 General Zoology** 4 hrs. credit
PREREQUISITE: High school Biology or Chemistry recommended. Designed for students planning to concentrate or teach in science. Deals with classification, structure, function, environmental relations, origin, and development of animals. Illustrations and application of the scientific method. 2-6

- 163 Physiological Anatomy I** 4 hrs. credit
PREREQUISITE: High school Biology. Detailed studies of gross and microscopic anatomical structures of the human body and their structural-functional interrelationships. Limited to students majoring in nursing, medical technology and health sciences. Must be taken in sequence with Physiological Anatomy II. Laboratory studies, hospital problems and seminars. 2-6

- 164 Physiological Anatomy II** 4 hrs. credit
PREREQUISITE: Biology 163. A continuation of Physiological Anatomy I.
Laboratory studies, hospital problems and seminars. 2-6

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|----------------------------------|------------------------|
| 192 Special Problems II | 1-3 hrs. credit |
| Description same as Biology 191. | |

- 251 Microbiology** 4 hrs. credit
PREREQUISITE: Biology 111 and 112; or Biology 151; or Biology 161; or Biology 163. Survey of bacteria, fungi, protozoa, parasites, and viruses. A study of their structure and function including cellular metabolism and physiology. Microbes in health and disease. Control of pathogens by sterilization, chemical agents, and other means. Defense mechanisms of the body. 2-6

- 261 Comparative Vertebrate Anatomy** 4 hrs. credit
PREREQUISITE: Biology 161 completed with minimum grade of C. Evolution of the higher taxonomic groups of chordates and a comparative study of their gross morphology. Special emphasis on dissection of various chordates and their relationship. 2-6

263 Field Zoology	2-4 hrs. credit
PREREQUISITE: Biology 161. Field studies of selected groups of invertebrates and vertebrates in their natural habitats, local and regional ecology, taxonomy and adaptive mechanisms in natural communities. Designed for majors in conservation, wildlife management, and teaching. Field and laboratory investigations. 2-4	
281 Genetics	3 hrs. credit
PREREQUISITES: Biology 151, or Biology 161, and permission of the instructor. Principles of descriptive and quantitative genetics applied to selected groups of plants and animals. Laboratory investigations and lecture-discussions. 2-4	
291 Special Problems III	1-3 hrs. credit
PREREQUISITES: Any college biological science course, and permission of instructor. Independent undergraduate investigations in scientific and social problems involving biological science. Field, or laboratory, or library research with seminars and technical papers.	
292 Special Problems IV	1-3 hrs. credit
Description same as Biology 291.	
CHEMISTRY	
151 General Chemistry I Theory	3 hrs. credit
PREREQUISITE: Demonstrated competence in algebra and high school chemistry or Chemistry 81. Chemistry 151-L should also be taken concurrently. Atomic theory, chemical bonding, resonance, periodic table, colligative properties, stoichiometry, colloids, simple crystal structure and some elements of thermodynamics. 4-0	
151 L General Chemistry I Laboratory	1 hr. credit
Chemistry 151 must be taken concurrently, if not taken earlier. This course utilizes the research approach to laboratory work. After a few introductory experiments, the student is assigned laboratory problems involving the formulation and testing of hypotheses. Literature work is stressed. 0-3	
152 General Chemistry II Theory	3 hrs. credit
PREREQUISITE: Chemistry 151 with a C or better. Chemistry 152-L should be taken concurrently. A continuation of Chemistry 151. Solutions, collision theory, equilibrium, redox reactions, electrochemistry, molecular structure and properties of selected elements. 4-0	
152 L General Chemistry II Laboratory	1 hr. credit
PREREQUISITES: Chemistry 151 and 151-L with a C or better. Chemistry 152 must be taken concurrently, if not taken earlier. Continuation of Chemistry 151-L, with more advanced problems, including development of a scheme for analysis of selected ions. 0-3	
191 Special Problems in Qualitative Analysis	1 hr. credit
PREREQUISITE: Permission of Chemistry Department. Intended to supplement Chemistry 152-L by providing additional experience in the procedures of qualitative analysis, both in following an assigned scheme and in developing new schemes. 0-4	
192 Special Projects and Seminars I	1-4 hrs. credit
193 Special Projects and Seminars II	1-4 hrs. credit

251	<i>Quantitative Chemistry</i>	4 hrs. credit
	PREREQUISITE: Chemistry 122 or 221. Knowledge of common logarithms essential. Theory and practice of volumetric and gravimetric analysis. Major emphasis on volumetric analysis. 3-8	
252	<i>Quantitative Chemistry</i>	4 hrs. credit
	PREREQUISITE: Chemistry 122 or 221. Similar to Chemistry 222 but adapted to the needs of medical technology students. Not accepted for chemistry or pre-medicine majors. 3-8	
253	<i>Organic Chemistry I</i>	4 hrs. credit
	PREREQUISITE: Chemistry 152 and 152-L. College German is recommended concurrently, if high school German not taken. First semester of a two-semester course, stressing mechanism and principles of organic reactions. Nomenclature, chemical bonds, stereochemistry, spectral analysis, correlation of physical properties with structure, use of chemical literature. Laboratory will deal largely with syntheses and use of equipment. 4-4	
254	<i>Organic Chemistry II</i>	4 hrs. credit
	PREREQUISITE: Chemistry 253 with a C or better. Continuation of Chemistry 253; discussion of reactions classified by type of mechanism. Laboratory will stress use of chemical literature. 4-4	
261	<i>Biological and Physiological Chemistry</i>	3 hrs. credit
	PREREQUISITE: Natural Sciences 112. Chemical principles and calculations, properties of substances of biological importance. 3-2	
291	<i>Special Problems in Organic Chemistry I</i>	1 or 2 hrs. credit
	Chemistry 253 must be taken concurrently, if not taken earlier. This course is intended to supplement Chemistry 253 with further laboratory problems in synthesis and identification of organic compounds. 0-8.	
292	<i>Special Problems in Organic Chemistry II</i>	1 hr. credit
	PREREQUISITE: Chemistry 291. Chemistry 254 must be taken concurrently if not taken earlier. Continuation of Chemistry 291.	
293	<i>Special Projects and Seminars III</i>	1-4 hrs. credit
294	<i>Special Projects and Seminars IV</i>	1-4 hrs. credit

ECONOMICS

153	<i>The History of Economic Ideas</i>	4 hrs. credit
	PREREQUISITE: None. A study of the major economic ideas of today and their roots in the past: who first proposed them and how and why they have changed since then. The nature of economic theories, definitions, propositions, and value judgments and the proper use of each. 4-0	
251	<i>Principles of Economics I</i>	4 hrs. credit
	PREREQUISITE: Sophomore standing or permission of the instructor. The allocation problems of every society with special emphasis on their solutions under the American capitalistic economy; preliminary analysis of the demand and supply activities of individuals, firms, groups, and governments; measuring national income and product, and explaining their fluctuations; monetary and banking institutions in relation to specialization and exchange, business cycles, and government fiscal and monetary policies. 4-0	

252 Principles of Economics II

4 hrs. credit

PREREQUISITE: Economics 251. The commodity markets: prices as causes and effects of supply and demand; determinants of consumer buying and of the actions of firms as buyers and sellers; factor markets: wages, rent, and interest as special types of prices; the role of profits and profit expectations; from partial to general equilibrium; from static to dynamic analysis: growth and development problems; international trade and finance; alternative economic systems. 4-0

ENGLISH**250 Children's Literature**

3 hrs. credit

PREREQUISITE: English 112 or two trimesters of Humanities. A survey of literature for children of all ages, aimed at developing criteria for selecting books for children. 3-0

251 Creative Writing

3 hrs. credit

PREREQUISITE: English 112 or two trimesters of Humanities. Through analysis of various forms of writing and frequent compositions, the student is encouraged to develop according to his own interests and abilities. 3-0

271 Dramatic Literature

3 hrs. credit

PREREQUISITE: English 112 or two trimesters of Humanities. Designed to develop appreciation, this course is concerned with the nature, purpose, and methods of drama. Half the course is given to the reading of modern plays and half to plays of Shakespeare. 3-0

281 American Literature

3 hrs. credit

PREREQUISITE: English 112 or two trimesters of Humanities. Major writers of the United States. 3-0

282 American Literature

3 hrs. credit

PREREQUISITE: American Literature 281. Continuation of 281.

GEOGRAPHY**151 Physical Geography I**

4 hrs. credit

PREREQUISITE: None. Study of the natural environment which is important to man and his activities: introduction to maps and physical features; earth-sun-moon relationships; earth materials; land forms; drainage; and major natural resources. Introduction to weather and climate, soils and vegetation—their character, causes, significance and distribution. 4-1

152 Physical Geography II

4 hrs. credit

PREREQUISITE: None. Continuation of 151. An introduction to weather and climate, soils and vegetation—their character, causes, significance and distribution; population distribution and characteristics. 4-1

161 World Regional Geography

4 hrs. credit

PREREQUISITE: None. Essential Geographic characteristics and significant problems of the major regions of the world; cultural and natural resources of the nations of the world. 4-0

251 Economic Geography

4 hrs. credit

PREREQUISITE: 152 or 161, or permission of instructor. Fundamentals of economic activities of the major world geographic regions; a study of such activities as agriculture, forestry, fishing, mining, manufacturing, transportation, and trade. 4-0

262 Climatology 3 hrs. credit
PREREQUISITE: 152 or consent of instructor. Analysis of climatic elements and controls; classification and distribution of climatic types; fundamentals of geophysics. 2-2

291 Special Projects and Seminars I 1-4 hrs. credit
Independent, informal study and research for superior students on a specific and significant geographical topic. May not be undertaken prior to completion of three trimesters of Geography courses. Consent of instructor required.

292 Special Projects and Seminars II 1-4 hrs. credit

GEOLOGY

151 Physical Geology 4 hrs. credit
PREREQUISITE: None. A study of the materials and agents responsible for the development of topographic and structural features of the earth. Introductory study of common rocks and minerals. Introduction to maps. One field trip required. 3-2

152 Historical Geology 4 hrs. credit
PREREQUISITE: Geology 151. A study of the successive stages in development of North America as a typical continent, and the evolution of life. Interpretation of topographic and geologic maps and identification of invertebrate fossils. One field trip required. 3-2

271 World Mineral Resources (Non-metallic) 3 hrs. credit
PREREQUISITES: Geology 151 and 152 or permission of instructor required. A study of the origin and geographic distribution of petroleum, coal, building stones, lime and cement, clay, sand and gravel, salt and gypsum, fertilizers, gem stones, and other non-metallic minerals. Occasional field trips. 3-0

272 World Mineral Resources (Metallic) 3 hrs. credit
PREREQUISITES: Geology 151 and 152 or permission of instructor required. A study of the origin and geographic distribution of iron, copper, lead, zinc, aluminum, radioactive minerals, and other metallic resources. Occasional field trips. 3-0

291 Special Projects and Seminars 1 - 4 hrs. credit
292 Special Projects and Seminars 1 - 4 hrs. credit

HISTORY

161 Political, Social, and Economic History of Europe, 1300-1815 4 hrs. credit
PREREQUISITE: None. The Renaissance and Reformation; the rise of capitalism and national states; colonial expansion; the Enlightenment, the French Revolution, and the Napoleonic era. Frequent use of original source materials. 4-0

162 Political, Social, and Economic History of Europe, 1815 to the Present 4 hrs. credit
PREREQUISITE: None. Nationalism; liberalism; socialism; imperialism; world wars; international organization; fascism and communism. Frequent use of original source materials. 4-0

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| 251 | <i>History of the United States to 1865</i> | 3 hrs. credit |
| | PREREQUISITE: None. History of the United States from its immediate European backgrounds to the end of the Civil War. Some emphasis on social history and American international relations. | 3-0 |
| 252 | <i>History of the United States from 1865 to the Present</i> | 3 hrs. credit |
| | PREREQUISITE: None. A continuation of History 251. United States History from the end of the Civil War to the present time. Some emphasis on social history and American international relations. | 3-0 |
| 257 | <i>Russia Since 1857 (Same as Political Science 257)</i> | 3 hrs. credit |
| | PREREQUISITE: None. Institutional, social, and economic developments within Russia. Includes early developments, but emphasizes events since 1917. | 3-0 |
| 258 | <i>History of the Far East</i> | 4 hrs. credit |
| | PREREQUISITE: None. China, Japan, India, and nearby areas. A cultural as well as political and economic study. | 4-0 |
| 261 | <i>Western Political, Social, and Economic Ideas, 1500 to Present</i> | 4 hrs. credit |
| | PREREQUISITE: None, but History 111 and 112 recommended. Open to freshmen on permission of instructor. Renaissance, rise of capitalism, nationalism, liberalism, socialism, imperialism, international organization, fascism and communism. Frequent use of original source materials. | 4-0 |

LANGUAGES

FRENCH

- | | | |
|-----|----------------------------|--|
| 111 | <i>Elementary French</i> | 4 hrs. credit |
| | PREREQUISITE: | None. A film-text course with emphasis on aural comprehension. Fundamentals of pronunciation, daily oral-aural practice with required laboratory assignments, learning a vocabulary useful in daily life. 4-0 |
| 112 | <i>Elementary French</i> | 4 hrs. credit |
| | PREREQUISITE: | French 111 or one year of high school French. A continuation of French 111. Oral-aural practice continues with required laboratory assignments, grammar principles, accompanied by exercises and written composition. Outside reading for comprehension of easy French reading material without translation. 4-0 |
| 211 | <i>Intermediate French</i> | 4 hrs. credit |
| | PREREQUISITE: | French 112 or two years of high school French. Review and application of essential principles of French grammar by means of oral and written exercises and composition, pronunciation through oral and aural exercises and conversation, reading of French prose, outside reading to develop ability to read rapidly at sight. As far as possible conducted in French. 4-0 |
| 212 | <i>Intermediate French</i> | 4 hrs. credit |
| | PREREQUISITE: | French 211 or three years of high school French. A continuation of French 211, with somewhat more emphasis on oral skill and con- |

GERMAN

- 111 *Elementary German* 4 hrs. credit
PREREQUISITE: None. Fundamentals of German grammar and pronunciation. 4-0
- 112 *Elementary German* 4 hrs. credit
PREREQUISITE: German 111 or one year of high school German. A continuation of German 111. 4-0
- 211 *Intermediate German* 4 hrs. credit
PREREQUISITE: German 112 or two years of high school German. Review and application of essential principles of German grammar by means of oral and written exercises and composition, pronunciation through oral and aural exercises and conversation, reading of French prose, outside reading to develop ability to read rapidly at sight. As far as possible conducted in German. 4-0
- 212 *Intermediate German* 4 hrs. credit
PREREQUISITE: German 211. A continuation of German 211, with special emphasis on rapid reading for students particularly interested in science. 4-0

JAPANESE

- 111 *Elementary Japanese* 4 hrs. credit
PREREQUISITE: None. Basic grammatical construction, fundamentals of pronunciation with laboratory assignments, daily oral-aural practice, composition, reading, acquisition of Japanese vocabulary. 4-0
- 112 *Elementary Japanese* 4 hrs. credit
PREREQUISITE: Japanese 111. A continuation of Japanese 111. Oral-aural practice continued with laboratory assignments, grammar principles, accompanied by exercises and written composition. Outside reading for comprehension of easy Japanese reading material without translation. 4-0
- 211 *Intermediate Japanese* 4 hrs. credit
PREREQUISITE: Japanese 112. Review and application of essential principles of Japanese grammar by means of oral and written exercises and composition, pronunciation through oral and aural exercises and conversation, reading of Japanese prose, outside reading to develop ability to read rapidly at sight. As far as possible conducted in Japanese. 4-0
- 212 *Intermediate Japanese* 4 hrs. credit
PREREQUISITE: Japanese 211. A continuation of Japanese 211, with somewhat more emphasis on oral skill and conversation. 4-0

RUSSIAN

- 111 *Elementary Russian* 4 hrs. credit
PREREQUISITE: None. Basic grammatical construction, fundamentals of pronunciation with laboratory assignments, daily oral-aural practice, composition, reading, acquisition of Russian vocabulary. 4-0
- 112 *Elementary Russian* 4 hrs. credit
PREREQUISITE: Russian 111. A continuation of Russian 111. Continuation of oral-aural practice with laboratory assignments, grammar principles, accom-

panied by exercises and written composition. Outside reading for comprehension of easy Russian reading material without translation. 4-0

211 Intermediate Russian 4 hrs. credit

PREREQUISITE: Russian 112. Review and application of essential principles of Russian grammar by means of oral and written exercises and composition, pronunciation through oral and aural exercises and conversation, reading of Russian prose, outside reading to develop ability to read rapidly at sight. As far as possible conducted in Russian. 4-0

212 Intermediate Russian 4 hrs. credit

PREREQUISITE: Russian 211. A continuation of Russian 211, with somewhat more emphasis on oral skill and conversation. 4-0

SPANISH

111 Elementary Spanish 4 hrs. credit

PREREQUISITE: None. Emphasis on conversational Spanish. Daily oral-aural practice with required language laboratory assignments. Grammatical constructions accompanied by drill exercises and easy composition. Simple reading concerning Latin-American countries. 4-0

112 Elementary Spanish 4 hrs. credit

PREREQUISITE: Spanish 111 or one year of high school Spanish. A continuation of Spanish 111. 4-0

211 Intermediate Spanish 4 hrs. credit

PREREQUISITE: Spanish 112 or two years of high school Spanish. Reading of modern texts. Review and application of essential principles of grammar by means of oral and written exercises. Conversation. Outside reading to develop ability to read rapidly at sight. 4-0

212 Intermediate Spanish 4 hrs. credit

PREREQUISITE: Spanish 211 or three years of high school Spanish. A continuation of Spanish 211. 4-0

MATHEMATICS

131 Introductory College Mathematics 5 hrs. credit

PREREQUISITE: $3\frac{1}{2}$ years of college preparatory mathematics and demonstrated competence. Exponents and radicals, functions and graphs, trigonometric functions, fundamental identities, reductions, angular measure, simultaneous linear and quadratic equations, functions of a composite angle, complex numbers, inequalities, logarithms, mathematical induction, binomial theorem, inverse functions, determinants. 5-0

132 Mathematical Analysis I 4 hrs. credit

PREREQUISITE: Mathematics 131 with a C or better; or both Mathematics 121 and Mathematics 122 with a C or better. Definition and graph of function; lines, conic sections, translation of axes; limits and derivative; l'Hospital's rule; differentiation of algebraic functions and applications; mean value theorem; definite and indefinite integrals; volumes, centroids; differential equations of motion; distance formulas; rotation of axes; maxima, minima, and applications. 4-0

161	Analytic Geometry and Calculus I	4 hrs. credit
	PREREQUISITE: 4 years of college preparatory mathematics and demonstrated competence; Brief review of high school algebra; forms of equation of straight lines; the derivative of a function; limits; continuity; law of the mean; antiderivatives; finding areas by anti-differentiation; differentiation of algebraic functions; differentiation of trigonometric and inverse trigonometric functions; maxima and minima. 4-0	
162	Analytic Geometry and Calculus II	4 hrs. credit
	PREREQUISITE: Math 161 with a C or better. Differentials; definite integrals; the mean-value theorem; inequalities; families of curves; translation and rotation of axes; logarithmic and exponential functions; hyperbolic functions; inverse hyperbolic functions; techniques of integration; applications of integration. 4-0	
231	Mathematical Analysis II	4 hrs. credit
	PREREQUISITE: Mathematics 132 with a C or better. Differentiation of transcendental functions; derivatives with polar coordinates; integration by standard forms and special methods; applications of definite integrals; trapezoidal and Simpson's rule; arc length, area of revolution, center of curvature; direction cosines, angle between lines; equations of surfaces, planes, and solids. 4-0	
232	Mathematical Analysis III	4 hrs. credit
	PREREQUISITE: Mathematics 231 with a C or better. Partial differentiation, multiple integrals, and applications; moment of inertia; cylindrical and spherical coordinates; infinite series, convergence and divergence; Taylor's series; introduction to differential equations. 4-0	
261	Analytic Geometry and Calculus III	4 hrs. credit
	PREREQUISITE: Mathematics 162 with a C or better. Polar coordinates; vector algebra; differentiation of vector functions; L'Hospital's rule; infinite series and Taylor's formula; convergence; Newton's method; determinants and matrices; analytic geometry of three dimensions. 4-0	
262	Analytic Geometry and Calculus IV	4 hrs. credit
	PREREQUISITE: Mathematics 261 with a C or better. Partial differentiation; multiple integrals; first-order differential equations; equations of higher degree; linear differential equations; solution by power series; Laplace transform; simultaneous linear equations; boundary-value problems. 4-0	
271	Theory of Equations	3 hrs. credit
	PREREQUISITE: Mathematics 261 with a C or better. Linear systems; rational solutions; polynomials; real roots; complex roots; relations among roots; systems of higher degree; determinants and matrices; constructions. 3-0	
272	Elements of Abstract Algebra	3 hrs. credit
	PREREQUISITE: Mathematics 261 with a C or better. Sets; the real numbers; general algebraic systems; groups; rings; vector spaces; lattices and Boolean algebra. 3-0	
291	Special Projects and Seminars I	1-4 hrs. credit
	PREREQUISITE: Permission of Mathematics Department. Independent study and research on selected mathematical topics.	
292	Special Projects and Seminars II	1-4 hrs. credit
	PREREQUISITE: Same as Mathematics 291.	

PHILOSOPHY

211 <i>Introduction to Philosophy</i>	3 hrs. credit
Open to sophomores. Designed to acquaint the student with some of the fundamental questions that have confronted mankind and the way in which these questions have been dealt with by the most profound thinkers of the past and present. 3-0	
221 <i>Logic</i>	4 hrs. credit

PHYSICS

251 <i>Physics I</i>	5 hrs. credit
PREREQUISITE: High school physics or its equivalent, Math 161 or its equivalent; Natural Sciences 111 must be taken concurrently, if not taken earlier. Mechanics, heat, and sound. 4-3	
252 <i>Physics II</i>	5 hrs. credit
PREREQUISITE: Physics 251 and Math 162. A continuation of Physics 251. Magnetism, electricity, light, and modern physics. 4-3	
215 <i>Engineering Mechanics, Statics</i>	3 hrs. credit
PREREQUISITE: Physics 251 and Mathematics 162. Mathematics 162 may be taken as a parallel course. Covers forces, components, vectors, moments, couples, methods of sections, stress in frame structures analytically and graphically, cables, friction, centroids, shear and bending moments. 3-0	
261 <i>Electricity and Magnetism</i>	4 hrs. credit
PREREQUISITE: Physics 252 and Math 262, or 222, or 232, (the latter may be taken concurrently). Gauss' Law, Maxwell's equations, dielectric properties, electrical measurements, electronics. 3-3	
271 <i>Optics</i>	4 hrs. credit
PREREQUISITE: Physics 252. Physical and geometrical optics, optical rotation, birefringence, optical and spectroscopic instruments. 3-3	
281 <i>Thermodynamics</i>	4 hrs. credit
PREREQUISITE: Physics 252. Carnot cycle, laws of thermodynamics, thermodynamic functions, Onsager's equations, thermodynamics of the steady state. 4-0	
291 <i>Special Projects and Seminars I</i>	1 - 4 hrs. credit
292 <i>Special Projects and Seminars II</i>	1 - 4 hrs. credit

POLITICAL SCIENCE

251 <i>Comparative Government</i>	3 hrs. credit
PREREQUISITE: A college course in political science or history. Deals principally with governments of Great Britain, France, and Soviet Russia. Emphasis on theories of democracy, fascism, communism, and socialism. 4-0	

253 International Relations 3 hrs. credit
PREREQUISITE: A college course in political science or history. Introduction to the study of politics among nations, designed to provide a working knowledge of concepts necessary to understanding current world affairs such as the state system, colonialism, imperialism, and regional arrangements. Includes a survey of international organizations including the United Nations. 3-0

255 American Political Parties 2 hrs. credit
PREREQUISITE: A college course in political science or United States history. History, organization, structure, and functions of political parties of the United States; use of public opinion by political parties; election results, pressure groups, and pressure politics; governmental regulation of political parties and conduct of elections. 2-0

257 Russia Since 1500 (Same as History 257) 3 hrs. credit
PREREQUISITE: None. Institutional, social, and economic developments within Russia. Includes early developments but emphasizes events since 1917. 3-0

PSYCHOLOGY

251 General Psychology 4 hrs. credit
PREREQUISITE: Open to sophomores and to second trimester freshmen with a C+ or better average. Principles underlying experience and behavior, designed to give an understanding of human behavior as affected by learning, motivation, emotion, intelligence, perception, personality, and interpersonal relationships. 4-0

256 Advanced General Psychology 3 hrs. credit
PREREQUISITE: Psychology 251. Designed for students who will major in psychology and those who wish to explore more fully the fundamental principles of psychological science. 3-0

262 Child Psychology 3 hrs. credit
PREREQUISITE: Psychology 251. Facts and generalizations concerning growth of children from conception to adolescence; deals with physical, mental, social, and emotional development. 3-0

271 Psychology of Personality 3 hrs. credit
PREREQUISITE: Psychology 251. Application of psychological principles to interpersonal behavior; study of factors in the development of constructive personal adjustment as influenced by human relations in home, school, and community. 3-0

SOCIOLOGY

251 Principles of Sociology 3 hrs. credit
PREREQUISITE: None. Introduction to scientific study of human relationship and institutions. Includes evaluation of current literature as a reflection of man's culture. Basic for all courses in social work. 3-0

252 Social Problems 3 hrs. credit
PREREQUISITE: Sociology 251 or Psychology 251. The causes and solutions of social problems in a dynamic society. 3-0

**COURSE OFFERINGS FOR THE
SCHOOL OF NURSING**

- 101 Orientation to Nursing** 1 hr. credit
PREREQUISITE: None. Introduction to nursing as a profession. A general survey of nursing history, past and present. Designed to help the student nurse understand the broad aspect of ethics as related to the nursing profession and to acquaint the student with the social responsibilities of a professional person. 1-0
- 111 Fundamentals of Nursing I** 3 hrs. credit
PREREQUISITE: None. Designed to present the purpose of nursing today: to help the individual attain or maintain health. Beginning skills in nursing care, including the emotional components of illness, patient-family relationships, economic and social problems, and rehabilitation are introduced. Selected clinical experiences offer opportunities for the student to identify and gain skill in understanding and in meeting the patients' nursing care needs. 2-4
- 112 Fundamentals of Nursing II** 3 hrs. credit
PREREQUISITE: Nursing 111. Continuation of Nursing 111. 2-4
- 211 Medical-Surgical Nursing I** 10 hrs. credit
PREREQUISITE: Nursing 111 and 112. Comprehensive nursing care of the patient with medical-surgical problems is developed by theory and practice. The patient's nursing care needs are analyzed with respect to the individual, his family and his community. Plans for patient care are developed, implemented and evaluated both in classroom and clinical situations. The nursing care problems of the specialties—gynecology, dermatology, urology, eye, ear, nose, and throat, communicable diseases, orthopedics, operating room, and emergency rooms are integrated. Nutrition and diet therapy are integrated to help the student be cognizant of dietary needs with the implications to the socio-economic and cultural patterns of the individual. Pharmacology includes the origin, action, toxicity, preparation and administration of drugs as applicable to the clinical areas. 6-16.
- 212 Medical-Surgical Nursing II** 10 hrs. credit
PREREQUISITE: Nursing 211. Continuation of Nursing 211. 6-16
- 311 Maternal and Child Nursing I** 10 hrs. credit
PREREQUISITE: Nursing 111 and 112. This course deals with the normal conditions during pregnancy, parturition, and puerperium. It is designed to help the student develop basic skills, appreciation, attitudes, and ideals necessary and desirable for care throughout the maternity cycle, including care of the normal newborn and premature infant. The family-centered approach is emphasized. 6-16
- 312 Maternal and Child Nursing II** 10 hrs. credit
PREREQUISITE: Nursing 311. Principles and practices of nursing are adapted to the care of the child with emphasis on the phases of growth and development of the healthy child as well as the child who is ill. Community resources for promotion of health of the family are utilized. 6-16
- 411 Psychiatric Nursing** 7 hrs. credit
PREREQUISITE: Psychology 251 and 262. Guided learning experiences in the application of principles of psychiatric nursing as provided in a hospital

for the mentally ill and in allied community agencies. Interpersonal relationships explored as they influence patient care. 4-18

412 *Comprehensive Nursing Care* 5 hrs. credit

Through analysis of previous courses, the student will assess the nursing needs of selected patients and prepare and carry out a plan of total nursing care. Principles of administration are introduced and selected experiences will provide the student with the opportunity to apply these principles in her role as clinical nursing administrator. 2-18

415 *The Aging Process* 4 hrs. credit

Guided learning experiences in the application of principles of nursing to the care of aged in community agencies. Problems explored as they affect our aging population. 2-12

416 *Professional Adjustments* 2 hrs. credit

Emphasis placed on nursing problems from the perspective of evolving professional demands. Career selections, advanced educational program, professional opportunities and preparation are discussed. 2-0

COURSE SEQUENCE -- SCHOOL OF NURSING

<u>Course Number</u>		<u>Credit</u>
FIRST TRIMESTER		
111	Foundations of Science -----	4
163	Physiological Anatomy -----	4
251	General Psychology -----	4
111	Fundamentals of Nursing I -----	3
101	Orientation to Nursing -----	1
		<u>16</u>
SECOND TRIMESTER		
112	Foundations of Science -----	4
164	Physiological Anatomy -----	4
251	Microbiology -----	4
112	Fundamentals of Nursing II -----	3
		<u>15</u>
THIRD TRIMESTER		
261	Biological and Physiological Chemistry -----	3
262	Child Psychology -----	3
211	Medical-Surgical Nursing I -----	10
		<u>16</u>
FOURTH TRIMESTER		
111	Foundations of Society I -----	4
212	Medical-Surgical Nursing II -----	10
		<u>14</u>
FIFTH TRIMESTER		
112	Foundations of Society II -----	4
311	Maternal and Child Nursing I -----	10
		<u>14</u>
SIXTH TRIMESTER		
111	Foundations of Western Civilization I -----	4
312	Maternal and Child Nursing II -----	10
		<u>14</u>
SEVENTH TRIMESTER		
112	Foundations of Western Civilization II -----	4
411	Psychiatric Nursing -----	7
	Electives -----	3
		<u>14</u>
EIGHTH TRIMESTER		
211	Foundations of Western Civilization III -----	4
415	The Aging Process -----	4
	Electives -----	6
		<u>14</u>
NINTH TRIMESTER		
212	Foundations of Non-Western Civilization -----	4
412	Comprehensive Nursing Care -----	5
416	Professional Adjustments -----	2
	Electives -----	3
		<u>14</u>

**COURSE OFFERINGS FOR THE
COLLEGE OF COMMUNITY SERVICE**

ACCOUNTING

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|--|----------------------|
| 111 Introductory Accounting | 3 hrs. credit |
| PREREQUISITE: None. An introduction to accounting as first applied to a sole proprietorship. The meaning and purpose of accounting; statements; theory of debits and credits; trial balance; prepaid, unearned, and accrued items; depreciation and valuation of accounts receivable. Journalizing includes use of the general, purchase, sales, cash, and combination journals. | 3-0 |
| 112 Introductory Accounting | 3 hrs. credit |
| PREREQUISITE: Accounting 111. A continuation of Accounting 111. Includes the voucher system; payroll, sales, property and income taxes; partnership formation and procedures; corporation formation, records, surplus, dividends, stocks and bonds; departmental accounting; introduction to manufacturing and cost accounting. | 3-0 |
| Note: Credit will not be given for both 111 and 211 or 112 and 212. | |
| 221 Punched Card and Machine Accounting I | 3 hrs. credit |
| PREREQUISITE: Accounting 111 and 112 or equivalent. Punched card and posting machine techniques; accounts receivable, sales, and billing; accounts payable, purchases, and payment; inventory, payroll; and specialized procedures. Introduction to electronic processing. | 2-2 |
| 222 Punched Card Systems and Procedures II | 3 hrs. credit |
| PREREQUISITE: Accounting 221. Advanced principles of punched card techniques applied to business data processing with emphasis on systems and procedures and including laboratory problems. | 3-0 |
| 251 Principles of Accounting | 4 hrs. credit |
| PREREQUISITE: None. An introduction to accounting in which the approach is made through the corporate form of business. Methods of recording, reporting, and interpreting the financial data of the business unit are stressed. Includes the income statement and position statement; general ledger; accounts; journals, subsidiary ledgers; cash records; recording of revenues and receivables; adjusting and closing entries. | 4-2 |
| 252 Principles of Accounting | 4 hrs. credit |
| PREREQUISITE: Accounting 251. A continuation of Accounting 251. Deals with accounts and notes receivable; discounted notes receivable; discounted notes and bills; merchandising and manufacturing accounts; fixed assets, depreciation, and depletion; consignments and installment sales; partnership; corporate capital accounts; dividends, retained earnings; bonds; preparation and interpretation of financial statements. Included are topics often studied in intermediate courses. | 4-2 |
| 253 Cost Accounting | 3 hrs. credit |
| PREREQUISITE: Accounting 112 or 252. A study of the field of cost accounting; methods of handling materials, labor costs, manufacturing expenses; job order cost accounting; process cost accounting; standard cost accounting and the completion of a job order practice set. | 3-0 |

255 Federal Tax Accounting	3 hrs. credit
PREREQUISITE: Accounting 112 or 252. A study of the federal income tax laws. Major emphasis upon tax laws as they relate to individuals and small business. Preparation of the individual tax return. 3-0	
257 Social Security and Payroll Accounting	3 hrs. credit
PREREQUISITE: Accounting 111 or 251. Federal Social Security laws and State Unemployment Compensation laws as applied to business. A brief survey of other Michigan tax laws included. 3-0	
259 Auditing Theory and Procedure	3 hrs. credit
PREREQUISITE: Accounting 112 or 252. The principles and procedures of auditing, giving attention to auditing concepts, professional ethics and responsibility, the audit program, auditing procedures, working papers, and simple audit reports. 3-0	

AGRICULTURE

*111 Soils and Plant Nutrition	4 hrs. credit
PREREQUISITES: Chemistry 111, Biology 151. Fundamental principles of soils and fertilizers as they relate to the supplying of nutrients to plants. Role of major and minor elements in plants. Water requirements. Nutrient deficiencies. Factors which influence uptake of nutrients by plants. 3-2	
*112 Animal Growth and Nutrition	4 hrs. credit
PREREQUISITES: Chemistry 111, Biology 161. Feeds and basic concept of rations. Fats, carbohydrates, proteins and their metabolism. Role of minerals, vitamins and hormones in nutrition. Characteristics of ruminant and non-ruminant nutrition. Environmental factors influencing animal growth. 3-2	
*211 Economics of Agriculture	4 hrs. credit
PREREQUISITE: Economics 251. Economic and management principles and their application to resource use in agricultural production. Demand for farm products, principles of marketing and price determination. Economic problems of agricultural industry. 4-0	
*212 Plant and Animal Breeding	4 hrs. credit
PREREQUISITES: Biology 161 and 151. Fundamental genetic principles and their application to plant and animal improvement. 3-2	

* These courses are to be taught on the Delta campus by Michigan State staff.

ARCHITECTURE

105 Details	3 hrs. credit
PREREQUISITE: None. Elements of planning and construction of small homes. Lettering, symbols and conventions, footings, foundations, doors, windows, cornices, roofs, sections, pre-fab construction, specifications, and cost estimates. 0-6	
106 Small Home Planning	3 hrs. credit
PREREQUISITE: Architecture 105. Development of complete plans for small home, including site, foundation, floor plans, elevations, typical sections, details, specifications, rendered perspective, and cost estimate. 0-6	

155	<i>Projections</i>	2 hrs. credit
	PREREQUISITE: None. Basic graphical projection as applied to plans, sections, and elevations, intersections and developments, isometric drawings. 0-4	
156	<i>Graphics</i>	2 hrs. credit
	PREREQUISITE: Architecture 155. Problems in perspective, shades and shadows. 0-4	
205	<i>Architectural Problems</i>	3 hrs. credit
	PREREQUISITE: Architecture 106. Landscaped, scale model from student's plans for class demonstration. Special problems and reports. 0-6	
206	<i>Commercial Problems</i>	3 hrs. credit
	PREREQUISITE: Architecture 205. Design of small commercial building including all architectural drawings, details, specifications, and rendered perspective. 0-6	

ART

111	<i>Beginning Freehand Drawing</i>	3 hrs. credit
	PREREQUISITE: None. A beginning course in drawing designed for all students interested in creative expression in pencil, pen and ink, and wash. Representation and composition studies by drawing simple forms in line and value. Introduction to perspective. 0-6	
112	<i>Advanced Drawing and Composition</i>	3 hrs. credit
	PREREQUISITE: Art 111. Designed to give further understanding of composition and to develop creative ability in drawing. The representation of form with emphasis on values and textures as well as the study of abstract composition. Problems using charcoal. 0-6	
113	<i>Art Education</i>	3 hrs. credit
	PREREQUISITE: None. Introduction to art for prospective teachers. Develops the ability to stimulate the creative interests of children in art. Acquaints the student with a variety of methods and materials adjusted to various grade levels. 0-6	
114	<i>Art Education</i>	3 hrs. credit
	PREREQUISITE: None. A continuation of Art 113. Additional investigation of the theories of art education and creative growth of children. 0-6	
115	<i>Introduction to Design</i>	3 hrs. credit
	PREREQUISITE: None. Experimentation with the basic elements of design: line, form, space, value, texture and color. A variety of media used in both two and three dimensions, using abstract and representational approach. 0-8	
116	<i>Advanced Design</i>	3 hrs. credit
	PREREQUISITE: Art 115. A series of projects and experiments using the basic elements of design in a variety of media, both two and three dimensional. Special interest in the fields of commercial art: product, architectural, interior and advertising design. 0-8	
117	<i>Painting</i>	3 hrs. credit
	PREREQUISITE: Art 111. Experimentation in pastels, oil, and other media. Exploring techniques, composition, and color, based on studies in still life, landscape and the figure. Recommended to students interested in art as a hobby, as well as for art majors. 0-6	

121 Beginning Ceramics 3 hrs. credit

PREREQUISITE: None. Introductory study of ceramic clay, glazes and their application, techniques of construction, and direction on the potter's wheel. 0-6

151 History and Appreciation 3 hrs. credit

PREREQUISITE: None. A general survey of Western Art from prehistoric times through the 16th century. Deals with outstanding masterpieces and representative artists of the Egyptian, Greek, Roman, Romanesque, Gothic, and Renaissance periods. The emphasis is on the architecture and sculpture of those periods. 3-0

152 Art History and Appreciation 3 hrs. credit

PREREQUISITE: None. A continuation of Art 151. A general survey of the History of Western Art from the Renaissance through Baroque, Neo-Classicism, Romanticism, Impressionism, Expressionism, and the various modern schools. The emphasis is on the painting of those periods. 3-0

218 Advanced Painting 3 hrs. credit

PREREQUISITE: Art 117. Still life, landscape, and non-objective problems in the various techniques of water color, tempera, and oil. Recommended to students interested in art as a hobby, as well as for art majors. 0-6

222 Sculpture 3 hrs. credit

PREREQUISITE: None. Laboratory experiences in sculpture and sculptural forms with particular attention given to techniques of forming and building — plus the experience of casting in such media as plaster and cement. 0-6

BIOLOGY

111 General Biology 4 hrs. credit

PREREQUISITE: None. Lectures, discussions, field and laboratory investigations in the significant areas of science, botany, zoology, and physiology. Intended for students in liberal arts, education, and biological science fields. 3-4

112 General Biology II 4 hrs. credit

PREREQUISITE: Biology 111, or permission of the instructor. A continuation of Biology 111. Emphasis upon human biology, independent investigations, and applications to human affairs. 3-4

113 Health and Hygiene 3 hrs. credit

PREREQUISITE: None. Designed to create appreciation for the significance of health education for college students; to develop a better understanding of health; and to encourage more effective living in personal and community relationships. 3-0

141 General Physiology 4 hrs. credit

PREREQUISITE: Biology 111 or equivalent. A study of the body and its structures, and a knowledge of the correlation of the various systems in the body. 3-2

211 Microbiology 4 hrs. credit

PREREQUISITE: Biology 111, 112, or 161 and Chemistry 111. Deals with the fundamental principles and laws of bacteriology and their applications. Special attention will be given to the study of representative bacteria, molds and other allied micro-organisms. 2-6

BUILDING CONSTRUCTION

- 101 *Materials* 3 hrs. credit
PREREQUISITE: None. A detailed study of the sources of supply of materials and machines used in the building construction industry. 3-0

BUSINESS

- 105 *Beginning Typewriting* 2 hrs. credit
PREREQUISITE: None. A mastery of the keyboard and practice in the basic skills and techniques of the touch system of typewriting, for personal and vocational use. 2-2
- 106 *Intermediate Typewriting* 2 hrs. credit
PREREQUISITE: Business 105 or its equivalent. Vocational training for business. Special drills for perfecting the techniques necessary for accuracy and speed in typewriting, particularly in business letters, tabulations, reports, and other forms used in business offices. Training in the use of transcribing machines and duplication processes. 2-2
- 107 *Advanced Typewriting* 2 hrs. credit
PREREQUISITE: Business 106 or its equivalent. The planning of typical business projects, at a rate equivalent to that expected in an office. Advanced drill and copy work to develop speed and accuracy. Additional training in the use of transcribing machines. 2-2
- 110 *Beginning Shorthand* 4 hrs. credit
PREREQUISITE: None. Basic principles of Gregg Shorthand Simplified, including a study of brief forms and elementary vocabulary; development of skill in reading, and fluency in writing; dictation of practiced and new materials; pre-transcription training. 4-1
- 111 *Intermediate Shorthand* 4 hrs. credit
PREREQUISITE: Business 105 and 110 or their equivalent. Must be accompanied by Business 106 or 107. Acquisition of speed in taking new-matter dictation; development of speed and accuracy in transcription skills. Includes English grammar review, vocabulary study, spelling. 4-1
- 112 *Dictation and Transcription* 4 hrs. credit
PREREQUISITE: Business 111. Emphasis placed on the development of skills in handling more difficult vocabulary; increase in shorthand dictation speed through a process of automatization and good work habits; increase in speed and accuracy of transcription, and the development of special techniques in handling office dictation. Emphasis on transcribing mailable letters through improvement of shorthand, typewriting, and English. 4-0
- 113 *Speed Building and Specialized Shorthand* 3 hrs. credit
PREREQUISITE: Business 112 or consent of department chairman. To develop high speed in taking and transcribing dictation; special vocabularies for conference and court reporting, medical secretaries, legal secretaries, chemical secretaries, according to the career interest of the student. 3-0
- 117 *Transportation and Traffic Management, I* 3 hrs. credit
PREREQUISITE: None. Designed to provide the information, practice, and techniques necessary to qualify for position in the Traffic Management Divisions of larger industry and carrier companies. Covers the history of Amer-

ican Transportation Systems, developments leading to Federal regulation of carriers other than railroad, classification of freight, principles of freight rates and tariffs, shipping documents and their application in freight claims. 3-0

118 Transportation and Traffic Management, II 3 hrs. credit

PREREQUISITE: Business 117. A continuation of Transportation and Traffic Management 117. Deals with tariff circulars, construction and filing of tariffs, freight rates and tariffs, terminal facilities and switching, demurrage, transit privileges, warehousing and distribution, materials handling and packaging. See Business 217 and 218 for advanced courses. 3-0

120 Machine Calculation 2 hrs. credit

PREREQUISITE: Students weak in arithmetic should take Mathematics 105 before electing this course. A laboratory course dealing with the basic operations of such calculating machines as Friden, Monroe, Marchant, Comptometer, Burroughs, and the full keyboard and ten-key adding machines. May be taken in the same trimester with Business 121. 2-3

121 Machine Calculation 2 hrs. credit

PREREQUISITE: Business 120. A continuation of Business 120, with emphasis placed on vocational efficiency and speed of manipulation on the key-driven calculator. Five hours weekly. May be taken in the same trimester with Business 120 or Business 122. 2-3

122 Machine Calculation 2 hrs. credit

PREREQUISITE: Business 121. Advanced study in machine calculation. Designed particularly for specialization. Five hours weekly. May be taken in the same trimester with Business 121. 2-3

135 Filing 1 hr. credit

PREREQUISITE: None. Presents basic filing rules and provides practical application on exercises involving the alphabetic and numeric systems of filing. One or more units (Business 135, 136, 137) may be taken in one trimester. 1-0

136 Filing and Records Management 1 hr. credit

PREREQUISITE: Business 135. A continuation of the study of filing systems to include geographic, subject, and subject-decimal filing. Emphasis placed on the study of filing as a basic tool of management. Consideration is given to equipment and supplies, use and control of records, transfer and disposal of records. One or more units (Business 135, 136, 137) may be taken in one trimester. 1-0

137 Advanced Filing and Records Management 1 hr. credit

PREREQUISITE: Business 136. A continuation of the study of records management and specific filing problems, with outside readings, field trips, oral and written reports. One or more units (Business 135, 136, 137) may be taken in one trimester. 1-0

140 Introduction to Data Processing Machines 3 hrs. credit

PREREQUISITE: None. Provides student with a working knowledge of the scope of data processing machines as applied to business functions. No wiring or operation is included in this basic course. 3-0

141 Data Process Machine Operation	5 hrs. credit
PREREQUISITE: Business 140. Discussion of machines, card designs, wiring, followed by actual operation of machine involved. Machines such as the sorter, collator, reproducer, basic printing, and basic accounting machines will be included. 2-6	
145 Cooperative Office Education	3 hrs. credit
PREREQUISITE: Employable skill and consent of coordinator. Students placed in various school or business offices where they gain on-the-job experience. The work is supervised by the coordinator. Class meets with the coordinator one hour each week. 1-15	
146 Cooperative Office Education	3 hrs. credit
PREREQUISITE: Business 145. A continuation of Business 145. 1-15	
148 Cooperative Retail Education	3 hrs. credit
PREREQUISITE: Employable skills and consent of coordinator. Students work in community retail stores. Their work is supervised by a coordinator. Class meets with the coordinator, one hour each week. 1-15	
149 Cooperative Retail Education	3 hrs. credit
PREREQUISITE: Business 148. A continuation of Business 148. 1-15	
150 Orientation to Medical Office Work	½ hr. credit
PREREQUISITE: None. Introduction to the medical secretarial opportunities and responsibilities. A joint effort of the Medical Assistants and the College to acquaint students with the work of the medical secretary. 1-0	
151 Orientation to Public Health Vocations	½ hr. credit
PREREQUISITE: None. Introduction to the public agencies closely connected with the work of the medical secretary. 1-0	
160 Business Organization	3 hrs. credit
PREREQUISITE: None. Acquaints student with principles, problems and practices of business and industry. Consideration given to the areas of organization, management, labor, production, markets, finance, and insurance. Designed also to help business students select a field of specialization. 3-0	
175 Advertising	3 hrs. credit
PREREQUISITE: None. A study of the basic elements of advertising. Special emphasis placed on the investigation of economic and social aspects of advertising, media selection, and package design. Trade names, marks, and slogans discussed. 3-0	
180 Salesmanship	3 hrs. credit
PREREQUISITE: None. Deals with the fundamentals of selling. Includes analyzing the product; evaluation of customer's needs, desires, and buying motives; the application of sales procedures. Provides training in sales techniques and in the development of a sales personality. 3-0	
217 Transportation and Traffic Management, III	3 hrs. credit
PREREQUISITE: At least one trimester of Transportation and Traffic Management or its equivalent. A continuation of Transportation and Traffic Management 117-118, including through routes and rates, milling in transit, technical tariff and rate interpretation, overcharges and undercharges, losses and damages, and a review of decisions of the Inter-State Commerce Commission. 3-0	

218	<i>Transportation and Traffic Management</i>	3 hrs. credit
	PREREQUISITE: Business 217. A continuation of Transportation and Traffic Management 217, including evolution of the Interstate Commerce Act, construction of the Interstate Commerce Act, its interpretation and application, procedures and practice before the Interstate Commerce Commission, statutory authority for awarding damages, and a review of decisions of the Inter-State Commerce Commission. 3-0	
230	<i>Nursing Arts</i>	3 hrs. credit
	PREREQUISITE: Business 150 and Business 151, at least one trimester of Biology, or consent of Chairman of Business Department. Designed to provide knowledge of Nursing Arts that will enable the secretary to work cooperatively and efficiently with doctor, members of staff, patients; to train the student in the simpler techniques of nursing so that she may assist the doctor when it is not possible for a nurse to be in attendance; to provide the secretary with an appreciation of medical care, so that she may interpret, accurately to the public, the health processes in her community. 2-2	
231	<i>Orientation to the Medical Laboratory</i>	3 hrs. credit
	PREREQUISITE: Business 230, or consent of the Chairman of the Business Department. Lectures, demonstrations, and laboratory experience to familiarize the student with laboratory procedures commonly used in the medical office. Special emphasis on terminology used in reporting findings; mixing and standardizing common solutions and reagents. An acquaintanceship with microbiology and bacteriology; qualitative urinalysis, hematology, microscopical examination of smears and sediments, BMR and EKG determinants.	
		2-2
240	<i>Business Practices</i>	3 hrs. credit
	PREREQUISITE: Business 106, or the equivalent, and English 121. Business Practices is recommended for all business students. It coordinates the specialized skills and knowledge acquired in the accounting, general business, management, clerical, advertising, retailing, and transportation curricula. The importance of the office in today's economy and the specific office service units are studied from the managerial and office employee's point of view. Stress is placed upon the human relations element as it is applied to efficient, harmonious office procedures in the modern business office. Office practices integrated primarily through the completion of projects and through the Case Study approach. 3-0	
245	<i>Cooperative Office Education</i>	3 hrs. credit
	PREREQUISITE: Business 146. A continuation of Business 146. 1-15	
246	<i>Cooperative Office Education</i>	3 hrs. credit
	PREREQUISITE: Business 245. A continuation of Business 245. 1-15	
248	<i>Cooperative Retail Education</i>	3 hrs. credit
	PREREQUISITE: Business 149. A continuation of Business 149. 1-15	
249	<i>Cooperative Retail Education</i>	3 hrs. credit
	PREREQUISITE: Business 248. A continuation of Business 248. 1-15	
250	<i>Business Law</i>	3 hrs. credit
	PREREQUISITE: None. A study of contracts, negotiable instruments, employment, bailments, agency, and personal property. 3-0	

251 Business Law	3 hrs. credit
PREREQUISITE: None. A study of sales, insurance, real property, trusts, partnerships, and corporations. 3-0	
265 Credit and Collections	3 hrs. credit

PREREQUISITE: None. A practical and detailed study of the meaning and importance of credit. Among the areas covered are: the extent of retail credit; source of credit information; legal aspects, policies and procedures; and collection problems. Retail and mercantile credit, and collections, are approached primarily from the viewpoint of the management of credit operation. 3-0

270 Marketing	3 hrs. credit
PREREQUISITE: None. An introduction to the functional aspects of marketing; its institutions; price determination, merchandising, and distribution of products. 3-0	
280 Buying and Store Management	3 hrs. credit

PREREQUISITE: Accounting 253. Designed to train students in the analysis of management problems and the synthesis of solutions. The theories of management practices are discussed and the fundamentals of administrative, executive, and staff management are explained. Emphasis is placed on the preparation of essential information required by management for decision making. 3-0

285 Problems of Retail Merchandising	3 hrs. credit
PREREQUISITE: Business 180 and Business 270. A study of retail selling and the aspects of increasing sales through promotion and advertising. Buying, merchandise planning, marking merchandise, pricing for profit, and store accounting are discussed. 3-0	

CHEMISTRY

111 General and Inorganic Chemistry	4 hrs. credit
PREREQUISITE: High school chemistry or Chemistry 81 and one year of high school algebra with satisfactory placement test scores. For students in chemical engineering, agriculture, nursing, pre-dentistry, pre-medicine, medical technology, pre-veterinary, pre-forestry, home economics, and related curricula of chemistry. Includes laws of chemical combination, states of matter, atomic and molecular structure, physical and chemical properties of matter. Lecture, quiz, and laboratory. 4-3	

112 General and Inorganic Chemistry	4 hrs. credit
PREREQUISITE: Chemistry 111. A continuation of Chemistry 111. Descriptive study of metals and non-metals; further study of principles. Lecture, quiz, and laboratory. 4-3	

115 Engineering Problems	1 hr. credit
PREREQUISITE: Chemistry 111 with C or better, and 1½ years of high school algebra. Intended to familiarize the student with problems in equilibrium, titration, electrochemistry and redox reactions. Required for engineers not taking Chemistry 112 or 122. 1-0	

122 Inorganic Chemistry and Qualitative Analysis 5 hrs. credit
PREREQUISITE: Chemistry 111 and consent of Chairman of Chemistry Department. A continuation of general chemistry with emphasis on semi-micro qualitative analysis for laboratory work. 4-6

205 Organic Chemistry 4 hrs. credit
PREREQUISITE: Chemistry 112. A first course in the basic principles of organic chemistry, dealing with the carbon compounds of the aliphatic series. Fills the requirements for medicine, dentistry, pharmacy, agriculture, home economics, and other related curricula. 4-0

207 Organic Chemistry Laboratory 2 hrs. credit
PREREQUISITE: Chemistry 251. Preparation of a number of typical organic compounds and determination of their physical constants. 0-8

221 Qualitative Analysis 4 hrs. credit
PREREQUISITE: Chemistry 112. Explanation of laboratory procedure in terms of the principles of general chemistry. Semi-micro laboratory procedure involves identification of common cations and anions through appropriate unknowns. 3-6

DRAWING

105 Industrial Drafting 3 hrs. credit
PREREQUISITE: None. Elements of orthographic projection in the mechanical, structural, and electrical fields. Lettering, use of instruments, sketching, dimensioning, and details. Field trips. 0-6

106 Industrial Drafting 3 hrs. credit
PREREQUISITE: Drawing 105. Continuation of Drawing 105. Sections, Auxiliary projection, pictorial drawing, descriptive geometry, layout and development. Field trips. 0-6

125 Lettering 2 hrs. credit
PREREQUISITE: None. History, styles, and methods of lettering. Basic forms, media and tools, techniques, and designs. 0-4

155 Orthographic Projection 3 hrs. credit
PREREQUISITE: None. Use of instruments, lettering, principles of orthographic projection, auxiliary views, sections, dimensioning, pictorial drawing, white printing. 0-6

156 Descriptive Geometry 3 hrs. credit
PREREQUISITE: Drawing 155, Solid Geometry. Emphasis on space visualization and processes of solution. Problems comprise combinations of points, lines, planes, intersections, developments, warped surfaces, true angles, true size and shape, vectors, shades and shadows, and conics. 0-6

205 Advanced Industrial Drafting 3 hrs. credit
PREREQUISITE: Drawing 106, or 156. This is essentially a course, using the drafting board, for solving many general industrial problems. The Machinery's Handbook is used as a text. Problems are developed concerning the proper use of tolerances; proper dimensioning practice; the simple design of gears, couplings, simple clutches to meet specific demands. 0-6

206 Advanced Industrial Drafting 3 hrs. credit

PREREQUISITE: Drawing 205. Problems in design are expanded to include cams, gearing, jogs and fixtures, power transmission and some tooling. Field trips are taken through both trimesters. 0-6

216 Electrical Drafting 2 hrs. credit

PREREQUISITE: Drawing 105, accompanied by Electronics Technology 215. Standard electrical symbols, elementary wiring diagrams, and electrical codes are studied and applied. 0-4

ECONOMICS

111 Essentials of Economics I 3 hrs. credit

PREREQUISITE: None. The American economic system as a mixed economy where free enterprise and free markets predominate, but containing also minority elements of monopoly, government ownership, and government regulation and control; the significance of these features for economic progress, stability, justice, and freedom. 3-0

112 Essentials of Economics II 3 hrs. credit

PREREQUISITE: Economics 111. Continuation of Economics 111. 3-0

203 Industrial Relations 3 hrs. credit

PREREQUISITE: Economics 111 or 251. A study of the human factor in industry. Problems of wages, hours, unemployment, working conditions; Federal and state laws which relate to labor, management relations; policies and practices of unions and management. 3-0

ELECTRICAL TECHNOLOGY

230 Electrical Circuits 2 hrs. credit

PREREQUISITE: Physics 112 and Mathematics 122. Basic direct and alternating current circuits and their applications in machine operation and control; electrical measuring instruments. 0-4

240 AC and DC Machines and Controls 2 hrs. credit

PREREQUISITE: Electronics Technology 211. Basic study of AC and DC Machines and their controls including relays, circuit breakers, controllers, and contractors. 2-0

ELECTRONICS TECHNOLOGY

211 AC and DC Circuits 4 hrs. credit

PREREQUISITE: Mathematics 122, Physics 112, and accompanied by Mathematics 132. Direct and alternating current electricity, theory and applications, including: resistance, simple circuits, power, power factors, reactance, impedance, and circuit calculations. 3-2

212 Electronic Circuits 4 hrs. credit

PREREQUISITE: Electronics Technology 211. Study of the principles of operation and industrial applications of vacuum and gas tubes, photo-electric cells, and cathode ray tubes. Simple basic circuits using these tubes are also studied. 3-2

213 Semi-Conductors: Transistors	3 hrs. credit
PREREQUISITE: Electronics Technology 211, accompanied by Electronics Technology 212. Study of the theory and applications of transistors and other semi-conductors. The practical uses of these devices in industrial and communication circuits are emphasized. 2-2	
214 Radio and Television Circuits	3 hrs. credit
PREREQUISITE: Electronics Technology 213. Elementary principles of operation of rectifiers, amplifiers of various types, modulation, demodulation, detection, and antennas are studied. 3-0	
215 Electronic Control and Automation	4 hrs. credit
PREREQUISITE: Electrical Technology 240, Electronics Technology 212. Automatic control devices including regulating and automatic feed-back systems are studied. Induction heating, resistance welding, process timing, and similar circuits are examined. 4-0	
220 Electrical and Electronic Measurements	3 hrs. credit
PREREQUISITE: Physics 112, accompanied by Electronics Technology 211. A study of the design, application, and limitations of direct and alternating current, and electronic measuring instruments. 2-2	
230 Electronics Fabrications	3 hrs. credit
PREREQUISITE: Electronics Technology 212. Use of electrical hand tools; per-wiring; safety practice; techniques of commercial chassis fabrication; performance testing; trouble shooting. 1-4	
ENGLISH	
111 Freshman English	3 hrs. credit
PREREQUISITE: None. Development of competence in reading and writing with emphasis on various kinds of writing. 3-0	
112 Freshman English	3 hrs. credit
PREREQUISITE: English 111. A continuation of English 111 with emphasis on reading literary selections. 3-0	
121 Business Communication I	3 hrs. credit
PREREQUISITE: None. This course gives instruction and practice in writing of business letters, particularly letters of application, inquiry and reply, claims, and adjustments. A review of usage from the point of view of business and a short market research report are included. All assignments must be typewritten. 3-0	
122 Business Communication II	3 hrs. credit
PREREQUISITE: English 121. A continuation of English 121. This course emphasizes sales, collection, and adjustment series and substantial sales and market reports. 3-0	
211 Advanced Composition	3 hrs. credit
PREREQUISITE: English 112. Instruction and practice in various forms of writing. The student being encouraged to follow his own interests. 3-0	
221 Introduction to Literature	3 hrs. credit
PREREQUISITE: English 112 or permission of department. Designed to increase the students' enjoyment of literature. Readings in the short story and poetry. 3-0	

HISTORY

- 111 *A Survey of Early Western Civilization* 4 hrs. credit

PREREQUISITE: None. Political, social, economic, and cultural history of Europe from prehistoric times to the seventeenth century. Particular attention given to causes of the rise and fall of civilizations and their contributions to the modern world. 4-0

- 112 *A Survey of Later Western Civilization* 4 hrs. credit

PREREQUISITE: None. Political, social, economic, and cultural history of Europe from the Wars of Religion to the present time. Particular attention given to colonial, national and democratic movements and their influence on current events. 4-0

- 113 *History of Michigan* 2 hrs. credit

PREREQUISITE: None. History of Michigan from the time of first known human inhabitants through French and British domination, and finally American acquisition of Michigan leading to territorial status and statehood. Emphasis on Michigan history as a representative part of human culture. 2-0

MATHEMATICS

- 105 *Business Computation* 3 hrs. credit

PREREQUISITE: Mathematics 91 if mathematics placement test score is unsatisfactory. Combinations, special cases and short methods used in combinations; rapid calculation; various methods of proof in checking results; complex fractions and mixed numbers; decimals, percentage; interest; discount; logarithms, elements of statistics; averages, progressions, annuities. 3-0

- 108 *Elementary Statistics* 3 hrs. credit

PREREQUISITES: Mathematics 119 or its equivalent. Elementary statistical concepts studied include frequency distributions, measures of central tendency and dispersion, sampling, estimation, testing hypothesis, linear correlation and regression. 3-0

- 110 *Basic Mathematics* 3 hrs. credit

PREREQUISITE: Mathematics 92 if mathematics placement score is unsatisfactory. Designed for the elementary education curriculum. Stresses understanding as well as application of the basic fundamentals of arithmetic. A few concepts of set theory are introduced in the algebra; and the work in geometry is intuitive. In each area (arithmetic, algebra, geometry) emphasis is placed on the fact that there is a small group of basic facts and concepts from which the subject matter develops. Does not count toward mathematics major at senior college. 3-0

- 116 *Slide Rule* 1 hr. credit

PREREQUISITE: Mathematics 121 or its equivalent. Must precede or be taken concurrently. For engineering students or those majoring in physics or chemistry. Consult instructor before purchasing slide rule. 1-0

- 119 *Algebra* 3 hrs. credit

PREREQUISITE: Algebra 92 or its equivalent; Plane Geometry 93 advisable. Fundamental concepts of algebra including graphs, exponents, radicals, variation, proportion and logarithms. 3-0

120 Solid Euclidean Geometry 2 hrs. credit

PREREQUISITE: Mathematics 93 and 119, or Mathematics 119 may be taken concurrently or their high school equivalents must be on the student's record. Description: formulas, basic constructions and propositions, original exercises, mensuration. 2-0

121 Plane Trigonometry 3 hrs. credit

PREREQUISITE: Mathematics 93 and 119 with C or better, or their equivalents. (Mathematics 119 may be taken concurrently). Radian measure, coordinate systems, trigonometric ratios, identities, equations, inverse functions, graphs, logarithms, reduction and addition formulas, solutions of right and oblique triangles, including areas. 3-0

122 College Algebra 3 hrs. credit

PREREQUISITE: Mathematics 121 with C or better, or its equivalent. Review of exponents, radicals, quadratic equations; variations; proportion; systems of equations; complex numbers, theory of equations; determinants; inequalities. 3-0

221 Calculus I 5 hrs. credit

PREREQUISITE: Mathematics 123 with a C or better. Functions and limits; continuity; derivative; differentiation of algebraic, transcendental, and hyperbolic functions; maxima and minima; related rates; curve tracing; rectilinear and curvilinear motion; indefinite and definite integrals; areas; volumes; length of arc; work; liquid pressure; centroids; moments of inertia. 5-0

*To be discontinued, effective Dec., 1963

222 Calculus II 4 hrs. credit

PREREQUISITE: Mathematics 221 with a C or better. Further methods of integration, improper integrals, indeterminate forms, Taylor's and Maclaurin's series, infinite series, partial derivatives, multiple integrals, introduction to differential equations. 4-0

*To be discontinued, effective April, 1964

MECHANICAL TECHNOLOGY

111 Manufacturing Processes 2 hrs. credit

PREREQUISITE: None. Fundamental production processes including ore reduction, steel making, heat treating, foundry practice, hot and cold working, press work, and production machining processes. 2-0

211 Machine Tools 2 hrs. credit

PREREQUISITE: None. Introduction to the industrial shop; industrial safety, types and uses of materials; hand tools; precision instruments; purpose and operation of drill presses, lathes, and shapers. 0-4

212 Machine Tools and Fabrication 2 hrs. credit

PREREQUISITE: Mechanical Technology 211. Study of the purpose and operation of milling machines, grinders, production machine tools; introduction to the characteristics and applications of welding and cutting processes. 0-4

221 Materials and Metallurgy 3 hrs. credit

PREREQUISITE: None. Structure, use, and treatment of ferrous, non-ferrous, and non-metallic materials as used in mechanical design. 2-2

215 Methods Engineering 3 hrs. credit

PREREQUISITE: Drawing 205, Mechanical Technology 111, and Mechanical Technology 212. Fundamentals of motion and time study, methods of motion analysis and principles of effective work flow; designing and evaluating improved methods. 3-0

220	<i>Hydraulic and Pneumatic Circuits</i>	2 hrs. credit
PREREQUISITE:	Physics 111 and Mathematics 122. Fundamentals of fluids, fluid circuits, and their applications in machine operation, control and measuring devices.	0-4
251	<i>Mechanics</i>	3 hrs. credit
PREREQUISITE:	Physics 111 and Mathematics 122. Study of forces acting on rigid bodies by both analytical and graphic means; equilibrium laws for various force systems; centroids; center of gravity; moments of inertia; introduction to elementary dynamics.	3-0
252	<i>Strength of Materials</i>	3 hrs. credit
PREREQUISITE:	Mechanical Technology 251. Fundamentals of stress and strain, torsion, shear, bending, and deflection of beams, combined stresses, riveted, and welded joints.	2-2

MUSIC

111	<i>Music Appreciation</i>	3 hrs. credit
PREREQUISITE:	None. Acquaints the student with the fundamentals of listening and with the musical classics.	3-0
121	<i>Elements of Music</i>	3 hrs. credit
PREREQUISITE:	None. Planned to meet the needs of those who plan to teach in the elementary schools. Rudiments of music, including notation, clefs, keys, syllables. Teaching of rote songs.	3-0
141	<i>Choir</i>	1 hr. credit
PREREQUISITE:	None. Directed toward the study of representative choral music and public performances in college and community activities. May be taken for four trimesters.	3-0

PHYSICAL EDUCATION

101-201	<i>Physical Fitness</i>	M; W	1 hr. credit
A course designed to develop physical fitness through exercise and vigorous games. A physical fitness test will be administered and improvements recorded.	0-2		
104-204	<i>Team Sports</i>	M; W	1 hr. credit
A course designed to give the student the skills and knowledge for participating in team sports. Rules, techniques, and an appreciation of the game will be desired outcomes.	0-2		
107-207	<i>Dual Sports</i>	C	1 hr. credit
A course designed to present dual sports, especially those that have carry-on value. These are usually co-ed classes.	0-2		
111-211	<i>Individual Sports</i>	C	1 hr. credit
A co-ed course designed to give the student the skills and knowledge for participating in such carry-on activities as archery, golf, gymnastics, etc.	0-2		
114-214	<i>Aquatics</i>	C	1 hr. credit
Instruction in the skills involved in swimming, diving, life saving, small craft, and Water Safety Instructor.	0-2		
117-217	<i>Social Dance</i>	C	1 hr. credit
This course involves fundamental rhythms along with present day dance steps.	0-1		

121-221	<i>Folk and Square Dance</i>	C	1 hr. credit
A course designed to introduce folk and square dancing to the uninitiated and to broaden the repertoire of others. 0-2			
124-224	<i>Modern Dance</i>	W	1 hr. credit
A course designed to teach the fundamental bodily movements to expressive rhythms. 0-2			
127-227	<i>Special Skills</i>	M; W	1 hr. credit
A course to take care of individual problems in connection with physical education. 0-2			
131	<i>Foundations of Physical Education</i>	C	2 hrs. credit
A study of the profession of physical education, its background, basic principles, its relationships to growth and mental health, and its vocational opportunities. 2-0			
132	<i>Administration of Sports</i>	C	2 hrs. credit
A course designed to acquaint the student with officiating and give him basic knowledge of the rules and fundamentals of football and basketball. This course also covers intramural scheduling and tournament planning. 2-2			
133	<i>Methods of Teaching Physical Education</i>	C	2 hrs. credit
Methods in teaching both classes and individuals in tumbling, in the use of the trampoline, and other apparatus. 1-2			
134	<i>First Aid and Safety</i>	C	2 hrs. credit
Study and practice in first aid treatment. Stress laid on prevention and safety measures. Student will pursue the standard and advanced first aid course of the American Red Cross and will receive certificates upon successful completion of the course. 2-2			
135	<i>Physical Education in Elementary Schools</i>	C	2 hrs. credit
This course deals with the principles, methods and materials of teaching physical education in the elementary schools. 2-2			
136	<i>Recreation Leadership</i>	C	2 hrs. credit
A study of the underlying principles of leadership. Study and practice in the problems of presenting recreation programs in churches, schools, playgrounds and camps. 0-2			

PHYSICAL SCIENCE

101	<i>Physical Science</i>	4 hrs. credit
PREREQUISITE: None. For students interested in understanding the major concepts of geology, chemistry, astronomy, and physics. Is intended to give the student a better grasp of the scientific method, and to afford practice in critical thinking. 3-2		
102	<i>Physical Science</i>	4 hrs. credit
PREREQUISITE: Physical Science 101. Continuation of Physical Science 101. 4-0		

PHYSICS

111	<i>General Physics</i>	4 hrs. credit
PREREQUISITE: Physics 82 or High School Physics, and High School Algebra I and II. A course designed to familiarize the student with basic physical principles. Deals with mechanics, heat, and sound. 4-3		

112 General Physics II 4 hrs. credit
PREREQUISITE: Physics 111. A continuation of Physics 111. Covers magnetism, electricity, light, and modern physics. 4-3

POLITICAL SCIENCE

103 Introduction to American Government 3 hrs. credit
PREREQUISITE: None. (Not open to students with credit in Political Science 111). Organization and functions of the political, electoral, legislative, administrative, and judicial processes of the federal, and state, and local governments. 3-0

111 American National Government 4 hrs. credit
PREREQUISITE: None. (Not open to students with credit in Political Science 103). Organization and functioning of the political, electoral, legislative, administrative, and judicial processes of the federal government. 4-0

112 State and Local Government 3 hrs. credit
PREREQUISITE: A course in Political Science or permission of the instructor. Development, structure, organization and problems of the state and local units of governments along with their relation to the federal government. 3-0

PSYCHOLOGY

211 General Psychology 4 hrs. credit
PREREQUISITE: Must be a sophomore or be a freshman with one trimester of C+ or better average. Principles underlying experience and behavior, designed to give an understanding of human behavior as affected by learning, motivation, emotion, intelligence, perception, personality, and interpersonal relationships. 4-0

SOCIOLOGY

211 Principles of Sociology 3 hrs. credit
Introduction to scientific study of human relationship and institutions. Includes evaluation of current literature as a reflection of man's culture. Basic for all courses in social work. 3-0

212 Social Problems 3 hrs. credit
PREREQUISITE: Sociology 211 or Psychology 211. The causes and solutions of social problems in a dynamic society. 3-0

SPEECH

101 Fundamentals of Speech for Engineering Students 3 hrs. credit
PREREQUISITE: None. For students in engineering and scientific fields. Practice in speaking and outlining stressed. Technical, expository speeches, illustrated with blueprints, charts, graphs, and scientific apparatus. Extemporaneous, manuscript, and report speeches. 3-0

102 Business and Professional Speech 2 hrs. credit
PREREQUISITE: None. This course covers basic speech techniques which an individual may apply in his daily encounters with other people. Emphasis on speaking situations most frequently met by business and professional people, including business interviews, conferences, discussions, and planning and conducting meetings. 2-0

111	<i>Speech and Voice Improvement</i>	3 hrs. credit
PREREQUISITE: None. A course designed to create awareness of what constitutes an effective voice; one which shows how voice is produced and controlled in order that common faults are overcome or avoided; and one which suggests how voice can be improved as an instrument of communication. 3-0		
112	<i>Principles of Public Speaking</i>	3 hrs. credit
PREREQUISITE: None. A course in practical problems of public address for the beginning student. Speaking assignments include impromptu, extemporaneous, manuscript, and memorized methods of delivery. Outlining and organization of content stressed. 3-0		
113	<i>Radio and Television Workshop I</i>	1 hr. credit
PREREQUISITE: None. Practical experience in mass media. Workshop members are given the opportunity to participate in writing, film, radio, and television projects. 0-3		
114	<i>Radio and Television Workshop II</i>	1 hr. credit
PREREQUISITE: Speech 113. Continuation of Speech 113. 0-3		
115	<i>Radio and Television Workshop III</i>	1 hr. credit
PREREQUISITE: Speech 114. Continuation of Speech 114. 0-3		
116	<i>Radio and Television Workshop IV</i>	1 hr. credit
PREREQUISITE: Speech 115. Continuation of Speech 115. 0-3		
201	<i>Speech for the Classroom Teacher</i>	3 hrs. credit
PREREQUISITE: None. A course for education majors. It aims for an understanding of speech in the educational process, self-improvement of the teacher through classroom speech activities, and application of these principles to teacher-pupil relationships. Its comprehensive goal is to aid the teacher in his professional and personal relationships with his students, his colleagues, and his community. 3-0		
211	<i>Advanced Public Speaking (Speechmaking)</i>	3 hrs. credit
PREREQUISITE: Speech 111 or 112. A survey of several forms of public address. Includes the theory of speech; frequent platform experiences. Attention given to radio and television speaking procedure. All speaking assignments outlined and personal and social communication stressed. 3-0		
213	<i>The Oral Interpretation of Literature</i>	3 hrs. credit
PREREQUISITE: Speech 111 or 112. Phonetics and voice culture are studied to enable one to interpret literature and to project personality over stage, radio, and television. Introduction to elements of voice, especially the voice mechanism. A survey of semantics examines language. 3-0		
214	<i>Discussion in Human Affairs</i>	2 hrs. credit
PREREQUISITE: A previous speech course. Designed to explain discussion as a means to better understanding and action in human affairs and to develop attitudes and skills which enable people to participate in discussion competently. A study of group leadership. 2-0		

SURVEYING

205	<i>Elements of Surveying</i>	3 hrs. credit
PREREQUISITE: Mathematics 121 or equivalent. Elements of surveying; use of equipment, measurement of distances, angles, and evaluation; analysis and use of verniers; a study of the public land system; traverses and topographic surveys and mapping. 1-4		

**THE FOLLOWING COURSES ARE DESIGNED FOR ADULTS AND ARE
USUALLY OFFERED IN THE EVENING COLLEGE**

BUSINESS

162 *Organizing and Operating a Small Business* 2 hrs. credit

PREREQUISITE: None. An attempt is made to cover most of the factors involved in the organizing and operating of a small business. The student is made aware of the various techniques and management aids available to a small business operator. 2-0

185 *Investments, How to Invest* 2 hrs. credit

PREREQUISITE: None. A course which covers the fundamentals of most types of investments, the various uses for each type. The problems of setting up a personal investment program are discussed. 2-0

261 *Review for CPS Exam* 3 hrs. credit

PREREQUISITE: None. General review of business law, accounting, economics, secretarial skills, secretarial procedures, and personal adjustment and human relations. Planning for taking the CPS Examination is also included. 3-0

262 *Review for CPS Exam* 3 hrs. credit

PREREQUISITE: None. Continuation of Business 261. Emphasis will be placed on those parts of the examination for which the individual students in the class have need. 3-0

ECONOMICS

204 *Case Studies in Labor Relations* 3 hrs. credit

PREREQUISITE: Economics 203. Application of principles of Industrial Relations to collective bargaining case studies. Experience is gained in techniques of grievance procedures and arbitration. 3-0

ENGLISH

151 *Creative Writing* 2 hrs. credit

PREREQUISITE: A manuscript of 2500 words. This is primarily a writers workshop conducted along lines similar to the Antioch Writers Conferences. Primary objectives are to obtain a working understanding of the basic principles of effective written communication together with practice and constructive criticism in the application of these principles in the writing of original materials. 2-0

MATHEMATICS

109 *Probability and Statistics* 3 hrs. credit

PREREQUISITE: 2 years of high school Mathematics. Considers frequency distributions, mean and standard deviation, Chebychaff's theorem, sample spaces, probabilities and sets, empirical results, events, conditional probability, independence, binomial distribution, testing hypotheses and acceptance sampling. (NBC Continental Classroom on TV) 3-0

PERSONNEL

151 *Personnel Principles and Manpower Management* 3 hrs. credit

PREREQUISITE: None. Examine ways by which individual and group needs may be merged with the needs of business. Covers latest developments in industrial relations and manpower management; job analysis, organizational planning, staffing, interviewing, testing, induction, training in employment, labor relations, contract negotiations, compensation employee morale. 3-0

152 Industrial Psychology	3 hrs. credit
PREREQUISITE: None. Applying psychological principles to selection, placement, training, supervision, evaluation and motivation of personnel. Introduction to problems of human relations in industry. 3-0	
PHILOSOPHY	
151 Creative Thinking	2 hrs. credit
PREREQUISITE: None. Presents the latest information on the creative thought process and the type of environmental factors most conducive to creativity. This is integrated with a series of projects which help each student to exercise and mature his own creative capacities. 2-0	
152 Ideas That Have Challenged Minds	2 hrs. credit
PREREQUISITE: None. The complexity of contemporary thought: its disagreements, instability, indifference, and vagueness discourage attempts to bring into focus and scrutiny the formation and projection of idea systems which have seemingly altered man's destiny. This course aims at selecting a few thinkers who represent the challenge of their time, and how these are reflected in idea systems today. 2-0	
RELIGION	
101 Basic Christian Beliefs	2 hrs. credit
PREREQUISITE: None. A study of the basic Biblical doctrines of forgiveness, repentance, salvation, etc., from several theological angles. Lecture and discussion. 2-0	
103 Literature of the New Testament	3 hrs. credit
PREREQUISITE: None. A study of the lives, times and teachings of Jesus and his apostles. The quality and style of literary forms will be studied, as well as pertinent archeological discoveries, especially in paleography. 3-0	
SPEECH	
151 Radio and Television Speaking	3 hrs. credit
Analysis and practice in applying principles of radio and TV speaking, such as news and musical announcing, the talk and the speech, the interview and the discussion, and acting. Elementary consideration is given to the uses of studio and control room equipment. 3-0	
152 Radio and Television Announcing	3 hrs. credit
The study of and practical experience in radio and TV announcing, including commercials, sportscasting, children's programs, ad lib speaking, special events, interviews, and the procuring, writing and rewriting of news. More attention will be paid to the use of control room equipment. 3-0	
153 TV Studio Operations I	3 hrs. credit
A theory and practice course. Students participating in studio and control operations with experiences in closed-circuit television. 2-2	
154 TV Studio Operations II	3 hrs. credit
Continuation of Speech 153. 2-2	
250 TV Production and Direction	3 hrs. credit
PREREQUISITE: Speech 153 or 154, or consent of instructor. TV production and direction through demonstration, discussion and assigned experience. The problems of casting, rehearsing, pacing and over-all program producing and directing. 2-2	

THE IMPROVEMENT DIVISION

- 51 Methods of Effective Study and Reading** 4 hrs. service credit
PREREQUISITE: None. The student is given an initial and final diagnosis of his reading skills and individual help with problems in academic achievement. Efficient study procedures, note taking and examination writing are developed. Techniques for the improvement of vocabulary, spelling, reading comprehension and reading rate flexibility are taught. Required of full time students in the improvement area.
- 52 Reading** 2 hrs. service credit
PREREQUISITE: None. A course designed to build efficient reading skills with emphasis on speed, comprehension and vocabulary development.
- 72 Elements of English Composition** 4 hrs. service credit
Designed for students who need to improve their writing before taking Freshman Composition. In order of emphasis, the materials covered are grammar, vocabulary, and style.
- 81 Chemistry** 4 hrs. service credit
PREREQUISITE: Algebra 92 or equivalent. Designed as preparatory to college chemistry for the student with no previous course work in chemistry.
- 82 Physics** 4 hrs. service credit
PREREQUISITE: Algebra 92 and Plane Geometry 93 or equivalents. Designed as preparatory to college physics for those with no previous course work in physics.
- Note:**
The mathematics courses listed below are taught by "programmed instruction". Students may proceed as fast as they are able and may undertake succeeding courses as soon as prerequisites are successfully met.
- 91 Arithmetic** 4 hrs. service credit
PREREQUISITE: None. Designed to meet the needs of students deficient in arithmetic as shown by a mathematics placement test. Four fundamental operations on whole numbers, common and decimal fractions, percentage, and applied problems; also, an introduction to modern mathematics.
- 92 Algebra** 4 hrs. service credit
PREREQUISITE: Arithmetic 91 or its equivalent, and adequate test scores. Four fundamental operations on monomials, polynomials, and fractions; linear equations; quadratic equations; systems of equations, mental multiplication and factoring; exponents and radicals.
- 93 Plane Geometry** 4 hrs. service credit
PREREQUISITE: Algebra 92 or its equivalent. Angles, parallel lines, Pythagorean theorem, polygons, loci, circles, proportional line segments, similar polygons, areas.
- 94 Algebra II** 4 hrs. service credit
PREREQUISITE: Algebra 92 or equivalent; Plane Geometry 93 is recommended. Fundamental concepts of Algebra including graphs, exponents, radicals, variations, and logarithms; fundamental concepts of trigonometry, involving solution of right and oblique triangles. A student who has met all entrance requirements for the College of Community Service and who receives a B in this course is entitled to receive academic college credit.

BOARD OF TRUSTEES

<u>Bay County</u>	<u>Midland County</u>	<u>Saginaw County</u>
OSCAR M. ANDERSON 5579 Gaertner Court Bay City, Michigan	LEONARD BERGSTEIN 7 Snowfield Drive Midland, Michigan	MAURICE E. BROWN 304 Garden Lane Saginaw, Michigan
GEORGE E. BUTTERFIELD 2600 Center Avenue Bay City, Michigan	WILLIAM R. COLLINGS 1300 Crescent Drive Midland, Michigan	DONALD C. DURMAN 408 South Jefferson Saginaw, Michigan
FREDERICK J. CHAPIN 101 W. John Street Bay City, Michigan	HERBERT H. DOW 2301 Sugnet Road Midland, Michigan	HARRY HAWKINS 51 Benton Road Saginaw, Michigan
RUSSELL J. SCHAFER Pinconning, Michigan	JANE N. SUTTON 4619 Concord Court Midland, Michigan	C. JAMES STUART 518 West Broad Chesaning, Michigan

TRUSTEE ELECT CLARENCE F. GRAEBNER
(to take office for six year term as of July 1, 1963)

ADMINISTRATIVE OFFICERS

SAMUEL D. MARBLE	<i>President</i>
B.A.—University of New Mexico	
M.A., Ph.D.—Syracuse University	
LL.D.—Cedarville College	
FRANKLIN G. BOUWSMA	<i>Director of Community Relations and Special Assistant to the President</i>
B.A.—Calvin College	
M.A.—University of Michigan	
JOHN H. BRINN	<i>Dean of College of Community Service</i>
B.S., M.A.Ed.—Murray State College	
DONALD J. CARLYON	<i>Business Manager</i>
B.A.—University of Nebraska	
LUIS E. FOLGUERAS	<i>Director of School of Nursing</i>
R.N.—Rockland State Hospital	
B.S., M.A.—New York University	
CARLTON L. KRATHWOHL	<i>Dean of Students</i>
B.A.—University of Buffalo	
Ed.M.—University of Buffalo	
Ph.D.—Syracuse University	
LIBBIE KESSLER	<i>Librarian</i>
A.A.—Bay City Junior College	
B.A.—University of Michigan	
M.L.S.—University of Illinois	
WILLARD L. READING	<i>Administrator of Buildings and Property</i>
B.S. in Civil Engineering—Michigan State University	
HUGO E. SIEHR	<i>Registrar</i>
B.S.—University of Wisconsin	
M.Ed.—Marquette University	
Ed.D.—Michigan State University	
JOSEPH M. STOKES	<i>Dean of College of Letters</i>
B.A.—Presbyterian College of South Carolina	
B.Litt. (Oxon.), M.A. (Oxon.)—Oxford University	
M.A., Ph.D.—Yale University	
ROBERT M. STUART	<i>Director of Continuing Education</i>
B.A.—Central Michigan University	
M.A.—University of Michigan	
ALFRED L. ANGER	<i>Accountant</i>
B.S.—Central Michigan University	

ADMINISTRATIVE STAFF

WILLIAM BALLARD	<i>Director of Television</i>
B.A.—Auburn University	
M.A.—Syracuse University	
RON BLACK	<i>Television Producer-Director</i>
B.A.—Alma College	
M.A.—University of Michigan	
AVIS M. CAREY	<i>First Assistant Librarian</i>
B.S.—Central Michigan University	
ELIZABETH ANN CORBISHLEY	<i>Associate Dean of Students</i>
B.A., M.A.—Michigan State University	
MICHAEL L. CROVELLA	<i>Manager of Office Services</i>
B.A. Bus. Ad.—Michigan State University	
KENNETH HEAFIELD	<i>Associate Dean of Students</i>
B.A.—Olivet College	
M.A.—University of Michigan	
PALMER B. KERN	<i>Coordinator of Cooperative Education</i>
B.A., B.S.—Western Michigan University	
JOHN R. LINGENFELTER	<i>Bookstore Manager</i>
B.S.—Shippensburg Pennsylvania State College	
DEAN A. MACCONNEL	<i>Purchasing Agent</i>
BETTY NICHOLSON	<i>IBM Supervisor</i>
VIRGINIA E. REMENSNYDER	<i>Health Service</i>
R.N.—Saginaw General Hospital	
GEORGE WAGENSELLER	<i>Assistant Chief Television Engineer</i>
RAY WOODS	<i>Chief Television Engineer</i>
AGATHA ZVIRBULIS	<i>Library Cataloguer</i>
LL.M.—University of Latvia, Riga	
M.L.S.—University of Michigan	

DELTA COLLEGE FACULTY

ADAMS, LORNE P.	<i>Physics</i>
A.B.; A.M.—University of Michigan	
BATZER, HAZEL M.	<i>Humanities</i>
B.A.—Central Michigan University	
M.A.; Ph.D.—University of Michigan	
BORLAND, JEAN S.	<i>Business</i>
B.B.A.—University of Michigan	
BREED, CHARLES	<i>Humanities</i>
B.S.—Western Michigan University	
M.S.—University of Wisconsin, Madison, Wisconsin	
*CAHILL, BRENDAN	<i>Humanities</i>
B.A.; M.A.—University of Southern California, Los Angeles	
CALEE, ROBERT T.	<i>Natural Science</i>
M.A.—University of Michigan	
B.S.; M.S.—University of Illinois, Urbana, Illinois	
CALLAHAN, ELEANOR, R.N.	<i>Nursing</i>
B.S.N.; M.S.N.—Wayne State University	
CANN, MARJORIE M.	<i>Mathematics</i>
B.S.—Acadia University, Wolfville, Nova Scotia	
M.A.—Michigan State University	
Ph.D.—University of Michigan	

*On leave 1962-63

CASTILLO, CHARLES W.	<i>Speech</i>
A.B.; A.M.—University of Redlands, Redlands, California	
CONWAY, LYNN	<i>Physical Education</i>
B.S.; M.A.—Michigan State University	
CORLISS, BRUCE C.	<i>Natural Science</i>
B.S.; M.S.—University of Michigan	
DAVIS, ALVA	<i>Humanities</i>
B.A.; M.A.; Ph.D.—University of Michigan	
DEDMAN, F. JOY	<i>Humanities</i>
B.A.—Berea College, Berea, Kentucky	
M.A.—University of Chicago, Chicago, Illinois	
DEVINNEY, ROBERT H.	<i>Natural Science</i>
A.B.—Albion College	
M.A.—University of Colorado, Boulder, Colorado	
M.A.—Kansas University, Lawrence, Kansas	
DEVOL, LLOYD E.	<i>Economics</i>
A.B.; M.A.—Ohio State University, Columbus, Ohio	
DOLL, LOUIS W.	<i>History</i>
A.B.; M.A.; Ph.D.; A.B.L.S.—University of Michigan	
DRURY, PATRICIA	<i>History</i>
B.A.—Occidental College, Los Angeles, California	
M.A.—Claremont Graduate School, Claremont, California	
ELKIN, COVA	<i>Mathematics</i>
A.B.—Western Kentucky State College, Bowling Green, Kentucky	
M.A.—University of Kentucky, Lexington, Kentucky	
EMERY, HARRIETT E.	<i>Mathematics</i>
B.A.—Eastern Michigan University	
M.A.—University of Michigan	
ETHERIDGE, EUGENE W.	<i>English</i>
A.B.—Marshall University, Huntington, W. Va.	
B.D.—Northern Baptist, Chicago, Illinois	
Th.M.—Northern Baptist, Chicago, Illinois	
Ph.D.—University of Edinburgh, Scotland	
EWING, META M.	<i>Mathematics</i>
B.S.; M.S.—Michigan State University	
FEUSSE, FLOYD A.	<i>Business</i>
B.S.—Central Michigan University	
M.A.—Colorado State College of Education, Greeley, Colorado	
FORTNEY, HAROLD B.	<i>History, Political Science</i>
A.B.—Fairmont State Teachers College, Fairmont, West Virginia	<i>Political Science</i>
M.A.—West Virginia University, Morgantown, West Virginia	
FREED, SAMUEL J.	<i>Physics</i>
A.B.—Northern State Teachers College, Marquette, Michigan	
M.S.—University of Michigan	
FRITZEMEIER, HULDA	<i>English</i>
B.A.—North Central College, Naperville, Illinois	
M.A.—State University of Iowa, Iowa City, Iowa	
GAINES, FRANCES B.	<i>Business</i>
B.S.—Central Michigan University	
GAITSKILL, LAWRENCE R.	<i>Political Science</i>
A.B.; M.A.—University of Kentucky, Lexington, Kentucky	
GILLIS, WILLIAM E.	<i>Humanities</i>
B.A.—Northeastern University, Boston, Massachusetts	
M.A.—Boston University, Boston, Massachusetts	
Ph.D.—University of Edinburgh, Scotland	

GORDON, DOUGLAS C.	<i>Business</i>
A.B.; B.S.—Central Michigan University	
M.A.—University of Michigan	
HACKETT, JOAN	<i>Speech</i>
B.S.—Northwestern University, Evanston, Illinois	
M.A.—Michigan State University	
HELLMUTH, ERMA J.	<i>Humanities</i>
A.B.; A.M.—University of Michigan	
HENDERSHOT, CARL H.	<i>Director, Improvement Division</i>
B.S.—University of Akron, Akron, Ohio	
M.A.; Ed.D.—Western Reserve University, Cleveland, Ohio	
HENNING, OTTO E.	<i>English</i>
B.S.—Central Michigan University	
M.A.—University of Michigan	
HOFFMANN, WILLIAM S.	<i>Political Science</i>
B.A.—University of North Carolina, Chapel Hill, North Carolina	
M.S.—University of Wisconsin, Madison, Wisconsin	
Ph.D.—University of North Carolina, Chapel Hill, North Carolina	
HOOKS, HUGH CHARLES	<i>English</i>
A.B.; M.A.—Baylor University, Waco, Texas	
KAHNKE, M. JEANNE	<i>Natural Science</i>
B.S.; M.S.; M.A.—University of Minnesota, Minneapolis, Minnesota	
Ph.D.—McGill University, Montreal, Canada	
KINSEY, DANIEL	<i>Physical Education</i>
B.S.—University of Illinois, Urbana, Illinois	
M.S.—Oberlin College, Oberlin, Ohio	
Ph.D.—University of Michigan	
KIRK, JOHN R.	<i>Humanities</i>
B.A.—University of New Mexico, Albuquerque, New Mexico	
Ph.D.—U.C.L.A.	
KLEIN, RICHARD	<i>Economics</i>
B.A.; M.A.—Michigan State University	
KLOSOWSKI, GEORGIANN	<i>Business</i>
B.S.—Central Michigan University	
M.A.—Teachers College, Columbia University, New York	
KOSTOFF, JOHN R.	<i>Natural Science</i>
B.S.; M.S.—Michigan State University	
LAGDEN, OLIVE	<i>Humanities</i>
A.B.; M.A.—University of Michigan	
LANGE, CRYSTAL	<i>Nursing</i>
B.S.—University of Michigan	
M.S.—Wayne State University	
LEESON, MARJORIE	<i>Business</i>
B.S.—Western Michigan University	
M.A.—University of Michigan	
LEVINE, SAMUEL	<i>Natural Science</i>
B.A.—Brooklyn College	
M.S.; Ph.D.—Columbia University, New York	
LONG, RUTH W.	<i>English</i>
B.S.—Taylor University, Upland, Indiana	
M.A.—University of Michigan	
LYNCH, ALINE	<i>Business</i>
B.S.—Western Michigan University	
M.A.—University of Michigan	

MABEE, CARLETON	Social Studies
B.A.— Bates College, Maine	
M.A.; Ph.D.— Columbia University, New York	
MALICHE, ELEANOR	Business
A.B.— Wayne State University	
M.A.; Ph.D.— University of Michigan	
MAZANEC, JOSEPH L.	Mathematics
B.S.— St. Norbert College, West DePere, Wisconsin	
M.S.— University of Wisconsin, Madison, Wisconsin	
McAULIFFE, JOHN J.	Humanities
B.A.— Boston University, Boston Massachusetts	
M.A.— University of Minnesota, Minneapolis, Minnesota	
MENNING, CURTIS BOYD	Natural Science
A.B.— Hope College	
M.S.— University of Michigan	
MORGAN, HARRIET C.	Biology, Physiology
B.S.— Central State Teachers College, Edmond, Oklahoma	
M.S.— University of Oklahoma, Norman, Oklahoma	
NAGEL ROSEMARIE	Reading
A.B.; M.A.— University of Michigan	
*NORTHRUP, RICHARD H.	Biology
A.B.— Alma College	
M.S.— Michigan State University	
OMANS, MARGARET	English
B.A.; M.A.— University of Michigan	
PARKS, HARRY G.	Political Science
A.B.— Eastern Michigan University	
A.M.— University of Michigan	
M.A.— Colorado State College	
M.S.; Ed.D.— Indiana University, Bloomington, Indiana	
PAWLING, JOHN	Natural Science
B.A.— University of North Dakota, Grand Forks, North Dakota	
M.S.— Pennsylvania State University, University Park, Pennsylvania	
PEASE, GEORGE O.	Drafting
B.S.; M.S.— Stout Institute, Menominee, Wisconsin	
PETTENGILL, ROBERT B.	Social Studies
B.A.; M.A.— University of Arizona, Tucson, Arizona	
Ph.D.— Stanford University, Palo Alto, California	
PLUM, KATHLEEN B.	Art
B.S.— University of Wisconsin, Madison, Wisconsin	
ROMAN, ROBERT M.	Psychology
A.B.— University of Michigan	
M.A.— Columbia University, New York, New York	
Ph.D.— University of Houston, Houston, Texas	
RYAN, WILLIAM A.	Geology
B.A.— Miami University, Oxford, Ohio	
M.A.— University of Missouri, Columbia, Missouri	
SANKER, LOUIS M.	Philosophy
B.A.; Ph.D.— University of London	
SCHWARTZ, ARNOLD A.	Drafting
B.S.F.; M.F.— University of Michigan	
SMITH, EARL W.	English
B.A.; M.A.; Ed.D.— University of Michigan	

*On Leave 1962-63

STRAUMANIS, ANDREJS G.	<i>Humanities</i>
B.A.—University of Michigan	
STRY, EDWARD J.	<i>Chemistry</i>
B.A.—Canisius College, Buffalo, New York	
M.Ed.—University of Buffalo, Buffalo, New York	
Ph.D.—Michigan State University	
THOMPSON, ELANORE H.	<i>Physical Education</i>
B.S.—Central Michigan University	
M.A.—Michigan State University	
TINKER, ROBERT N.	<i>Drafting</i>
B.S.—Michigan State University	
M.S.—Purdue University, LaFayette, Indiana	
TONHAZY, NICHOLAS	<i>Physical Science</i>
A.B.—Indiana University, Bloomington, Indiana	
M.S.; Ph.D.—University of Maryland, College Park, Maryland	
TUNSTALL, LUCILLE H.	<i>Natural Science</i>
B.S.—University of Colorado, Boulder, Colorado	
M.S.; Ph.D.—Wayne State University	
UEBERHORST, LOUIS K.	<i>English</i>
A.B.; M.A.; Ph.D.—University of Michigan	
VAN BENSCHOTEN, VIRGINIA	<i>English</i>
A.B.—Eastern Michigan University	
M.A.—Wayne State University	
LL.B.—University of Wyoming, Laramie, Wyoming	
Ph.D.—University of Michigan	
VILSONS, OSKARS K.	<i>Mathematics</i>
M.A.—University of Latvia, Riga	
VOGT, MARY ANN	<i>Chemistry, Physics</i>
A.B.—University of Michigan	
B.S.; M.S.—University of Illinois, Urbana, Illinois	
VOSBURGH, THEODORE D.	<i>Music</i>
B.M.; M.M.—Eastman School of Music	
Ph.D.—Detroit Institute of Musical Art	
D.M.—Western Michigan University	
WHEELER, DONALD A.	<i>Biology</i>
B.S.; M.S.—Michigan State University	
Ph.D.—Cornell University, Ithaca, New York	
WICHMAN, HARVEY	<i>Social Studies</i>
B.A.; M.A.—Long Beach State College, Long Beach, California	
WILLIAMS, FRED J.	<i>Chemistry</i>
B.S.—Michigan State University	
M.A.—University of Michigan	
WILSON, GEORGE H.	<i>Sociology</i>
B.A.; M.A.—Michigan State University	
WILSON, ZANE	<i>Mathematics</i>
A.B.—Otterbein College, Westerville, Ohio	
M.A.—Ohio State University, Columbus, Ohio	
WOODFORD, MARION W.	<i>Chemistry</i>
B.S.—Central Michigan University	
M.A.—Michigan State University	
WRIGHT, PALMER	<i>Natural Science</i>
B.S.; M.S.—University of Michigan	
YODER, WALTER D.	<i>Art</i>
B.A.; M.A.—Michigan State University	

